

CURRICULUM VITAE

MARCO FERRARI

(14 luglio 2022)

Professore Emerito di Biochimica (dal 12 luglio 2022)

**Professore Ordinario (dal novembre 2000 al 28 febbraio 2022) - Settore Concorsuale 05/E1
Biochimica Generale presso l'Università degli Studi dell'Aquila**

INDIRIZZO

Dipartimento di Medicina Clinica, Sanità Pubblica, Scienze della Vita e dell'Ambiente,
Coppito 2 (piano interrato), Via Vetoio (Località Coppito), 67100 L'Aquila
Telefono 3331232413
e-mail: marco.ferrari@univaq.it

DATI PERSONALI

Data di nascita: 2 luglio 1952
Luogo di nascita: Reggio nell'Emilia

PRINCIPALI INCARICHI ACCADEMICI PREGRESSI

- **Novembre 2013-ottobre 2019:** Coordinatore del Corso di Dottorato di Ricerca in "Scienze della Salute e dell'Ambiente" per il triennio 2013/2014-2015/2016 e per il triennio 2016/2017-2018/2019 (XXIX-XXXIV Ciclo)
- **Novembre 2010-ottobre 2013:** Coordinatore del Corso di Dottorato di Ricerca in "Imaging Molecolare ed Ultrastrutturale " (XXVI-XXVIII Ciclo)
- **Luglio 2012-marzo 2015:** Coordinatore della Sezione di "Medicina Clinica e Molecolare" presso il Dipartimento di Medicina Clinica, Sanità Pubblica, Scienze della Vita e dell'Ambiente
- **Novembre 2010:** Membro del Comitato Scientifico della Facoltà di Scienze Motorie
- **2008-2012:** Vicedirettore del Dipartimento di Scienze della Salute
- **2009-2012:** Vicepresidente del CAD del Corso di Laurea Magistrale in Medicina e Chirurgia
- **2002-2007:** Direttore della Scuola di Specializzazione in Medicina dello Sport
- **2001-2005:** Membro del CAD del Corso di Laurea Interfacoltà di Biotecnologie
- **2002-2005:** Presidente del Corso di Laurea Specialistica in Biotecnologie Mediche
- **2000-2006:** Membro della Commissione Scientifica di Ateneo
- **1994-2008:** Responsabile ERASMUS per il Corso di Laurea Magistrale in Odontoiatria e Protesi Dentaria
- **1997-2001:** Responsabile del sito Web della Facoltà di Medicina
- **1990-1998:** Membro della Commissione Scientifica della Biblioteca della Facoltà di Medicina
- **1996-1997:** Membro del Consiglio di Amministrazione dell'Università degli Studi dell'Aquila
- **1990-1993:** Membro del Comitato Tecnico-Scientifico del Centro di Servizi Interdipartimentali di Risonanza Magnetica Nucleare
- **1990-1995:** Componente del Consiglio di Gestione del Centro di Ricerca Inter Universitario "Studio dei meccanismi molecolari coinvolti nel danno tissutale da ipossia ed iperossia e di molecole che modificano tali lesioni"

CONTRIBUTO NELL'AMBITO DELLA COMMISSIONE "ABILITAZIONE SCIENTIFICA NAZIONALE" (ASN)

ASN	RUOLO	SETTORE CONCORSUALE
2016	Membro della Commissione dei ricorrenti	05/E1 - BIOCHIMICA GENERALE
2012 2016 2018 2021	Aspirante Commissario sorteggiabile	05/E1 - BIOCHIMICA GENERALE

EDUCAZIONE UNIVERSITARIA

- **Novembre 1980:** Specializzazione in Reumatologia, Università di Roma, "La Sapienza"
- **Luglio 1977:** Laurea in Medicina e Chirurgia con lode, Università di Roma, "La Sapienza"

POSIZIONI PRECEDENTI

- **Febbraio 1988-ottobre 2000:** Professore Associato di Biochimica presso Facoltà di Medicina e Chirurgia, Università dell'Aquila
- **Agosto-settembre 1991:** "Visiting Associate Professor", Department of Anesthesiology and Critical Care, Faculty of Medicine, Johns Hopkins University, Baltimore, MD, USA
- **Agosto-settembre 1989:** "Visiting Associate Professor", Department of Anesthesiology and Critical Care, Faculty of Medicine, Johns Hopkins University, Baltimore, MD, USA
- **Luglio 1987-gennaio 1988:** "Visiting Assistant", Department of Anesthesiology and Critical Care, Faculty of Medicine, Johns Hopkins University, Baltimore, MD, USA
- **Luglio 1986-giugno 1987:** "Fogarty International Fellowship" at the Department of Anesthesiology and Critical Care, Faculty of Medicine, Johns Hopkins University, Baltimore, MD, USA
- **Dicembre 1982-febbraio 1988:** Ricercatore di Ruolo presso il Laboratorio di Fisiopatologia, Istituto Superiore di Sanità, Roma
- **1981-novembre 1982:** Borsista presso l'Istituto Superiore di Sanità, Laboratorio di Farmacologia, Roma.
- **1980:** Borsista Fondazione Anna Villa Rusconi, presso la II Cattedra di Chimica Biologica, Facoltà di Medicina, I Università di Roma
- **Gennaio-dicembre 1979:** Ufficiale Medico del Corpo Sanitario Aeronautico
- **Settembre 1977-febbraio 1978:** Assistente Incaricato di Biochimica Applicata, Facoltà di Medicina, Università di Roma, "La Sapienza"

1) PARTECIPAZIONE COME RELATORE SU INVITO A CONVEGNI DI CARATTERE SCIENTIFICO IN ITALIA O ALL'ESTERO

1. **10 aprile 1988:** "New Technologies". (Invited Talk), XI European Congress of Perinatal Medicine, Roma.
2. **15 novembre 1988:** "International Workshop on Quantitative Spectroscopy in Tissue", Università di Erlangen-Nurnberg, Repubblica Federale Tedesca.
3. **2 aprile 1989** "III International Course on Recent Advances in Perinatal Medicine", Erice, Italia.
4. **20 luglio 1989:** "Brain monitoring by near infrared spectroscopy", Università di Mainz, Repubblica Federale Tedesca.
5. **19 settembre 1989:** "*In vivo*" evaluation of cytochrome-c-oxidase copper band", Johns Hopkins University, Baltimore, MD, USA.
6. **24 ottobre 1989:** "Fetal and Neonatal Monitoring", II World Symposium Computers in the Care of the Mother, Fetus and Newborn", Kyoto, Giappone
7. **27 ottobre 1989:** "Near-infrared spectroscopy; Fundamentals and its Clinical Applications", Università di Hokkaido, Sapporo, Giappone.
8. **21 ottobre 1991:** "Optical imaging of brain function and metabolism", Garmisch Partenkirchen, Repubblica Federale Tedesca.
9. **31 marzo 1992:** "Workshop on near infrared spectroscopy", National Institute of Health, Neurological Diseases and Stroke, Chevy Chase, MD, USA.
10. **1 giugno 1992:** "Spettroscopia dei tessuti nel vicino infrarosso risolta e non risolta nel tempo: principi, applicazioni cliniche, prospettive dello imaging", Società Italiana di Fotobiologia, Castiglioncello, Livorno.
11. **27 maggio 1992:** "Time resolved spectroscopy for brain and muscle oxygenation monitoring quantitation", Workshop on Tissue Optics and Spectroscopy, International Conference Photodynamic Therapy and Medical Laser Applications, Milano.
12. **27 settembre 1992:** "The methodology of near IR spectroscopy", Workshop on monitoring in patients with optical tissue sensors, theory, and clinical implications, Kloster Banz, Repubblica Federale Tedesca.
13. **11 gennaio 1993:** "Time resolved spectroscopy of exercising muscle", Johnson Foundation for Molecular Biophysics, University of Pensilvania, Philadelphia, USA.
14. **20 aprile 1993:** "*In vivo* applications of low frequency (280 MHz) ESR spectroscopy/imaging", Minisymposium on "EOR imaging and Overhauser imaging techniques", Sebersdorf, Austria.
15. **19 giugno 1993:** "*In vivo* electron paramagnetic resonance spectroscopy/imaging of paramagnetic species", 8th International Conference on Chemical Modifiers of Cancer Treatment, Kyoto, Giappone.
16. **21 giugno 1993:** "*In vivo* ESR spectroscopy/imaging at low frequency", Università di Showa, Tokyo, Giappone.
17. **23 giugno 1993:** "Recent aspects of ESR (electron spin resonance) and NIR (near-infrared) imaging *in vivo*", Università di Saitama, Giappone.
18. **29 agosto 1993:** "Time resolved spectroscopy", III International Symposium on the Biochemical Monitoring of the Fetus 1993, Bonn, Germania.

19. **12 novembre 1993:** "Near infrared spectroscopy in neonatology", University of Colorado, Denver, USA.
20. **16 novembre 1993:** "Quantitation of human muscle oxygenation by near-infrared time resolved and non-time resolved spectroscopy. Thirty-second annual Eastern Analytical Symposium, Somerset, NJ, USA.
21. **18 novembre 1993:** "Near-infrared spectroscopy *in vivo*", Johns Hopkins University, Baltimore, MD, USA.
22. **24 agosto 1995:** "Present status of electron paramagnetic resonance (EPR) spectroscopy/imaging for free radical detection", Life Sciences 1995, International Conference, Gozd Martuljek, Slovenia.
23. **4 dicembre 1995:** "From continuous wave to frequency-domain near infrared spectroscopy for absolute quantification of the chromophora", Ross Special Conference Hot Topics '95 in Neonatology, Washington, DC, USA.
24. **19 aprile 1996:** "Background and limitations of near infrared spectrophotometry", Symposium: "Neonatal cerebral oxygenation and hemodynamics", Nijmegen, Olanda.
25. **10 settembre 1996:** "Role of near infrared spectroscopy for non-invasive metabolic monitoring", European Society Parenteral Nutrition, Ginevra, Svizzera.
26. **19 settembre 1996:** "The role of near infrared spectroscopy for non invasive tissue metabolic monitoring", 41° Congresso Nazionale Società Italiana di Biochimica, Catania.
27. **23 ottobre 1996:** "Oxidative metabolism in muscle", The Royal Society Discussion Meeting Near infrared spectroscopy and imaging of living systems, Londra, UK.
28. **6 giugno 1997:** "Differential NIR-spectroscopy for the *in vivo*" determination of breast tissue composition", Breast Cancer Detection by Near Infrared Spectroscopy and Imaging, Berlino, Germania.
29. **11 settembre 1997:** "Imaging diagnostic techniques using near infrared light", 7th Congress of the European Society for Photobiology, Stresa.
30. **10 ottobre 1997:** "Near infrared spectroscopy of muscle", Tor Vergata Symposia on Trend in Biomedicine, Workshop on "*In vivo* near infrared spectroscopy", Università di Roma Tor Vergata.
31. **5 novembre 1997:** "Optical spectroscopy for non invasive diagnosis", Seminario sulla scienza in Italia organizzato dalla Ambasciata Italiana nel Regno Unito, Londra, UK.
32. **20 novembre 1997:** "Potential role of near-infrared spectroscopy for breast cancer detection", 36th Annual Eastern Analytical Symposium, Somerset, NJ, USA.
33. **18 agosto 1998:** "The role of near infrared spectroscopy in the evaluation of muscle diseases", 1st International Symposium on Medical Near Infrared Spectroscopy, Tokyo, Giappone.
34. **21 settembre 1998:** "The role of near infrared spectroscopy in the physiology of exercise", Japan Women's College of Physical Education, Tokyo, Giappone.
35. **22 settembre 1998:** "Advantages and limits of near infrared spectroscopy methods to measure muscle oxidative metabolism", Tokyo Medical University, Tokyo, Giappone.
36. **1 ottobre 1998:** "Ruolo delle diverse metodiche nella valutazione dell'emodinamica cerebrale. Near infrared spectroscopy", XV Congresso nazionale di "Neurosonologia", L'Aquila.
37. **14 giugno 1999:** "Outstanding role of NIRS in clinical medicine". 9th International Conference on Near-Infrared Spectroscopy Towards the Third Millennium, Verona.
38. **12 settembre 2000:** "Near infrared spectroscopy". 32nd National Congress of the Italian Society of Clinical Biochemistry and Clinical Molecular Biology, Rimini.
39. **4 ottobre 2001:** "Insight into muscle oxidative metabolism gained by near infrared spectroscopy: problems and prospects", Workshop "Non-invasive investigation of muscle function", Marseille, France.
40. **7 dicembre 2009:** "Shifting of frontal cortex activation during intermittent maximal handgrip exercise revealed by functional near-infrared topography". 446 WE-Heraeus-Seminar, Workshop "Optical Imaging of Brain Function", Bad Honnef, Germany
41. **15 ottobre 2010:** "NIRS: A historical perspective". (Keynote Talk). Functional Near Infrared Spectroscopy 2010 Conference. Harvard University, Cambridge, MA, USA
42. **9 novembre 2010:** "The use of near infrared spectroscopy in understanding skeletal muscle physiology: recent developments". Royal Society Theo Murphy International Scientific Meeting. Making Light Work: Illuminating the Future of Biomedical Optics. Kavli Royal Society Centre, Newport Pagnell, Buckinghamshire, UK
43. **30 settembre 2012:** "Muscle oxygen saturation monitoring by wireless near-infrared spectroscopy". XXXII World Congress of Sports Medicine. Roma, Italia. Symposium: Methodologies and systems for evaluating and monitoring training and sport performance.
44. **12 ottobre 2017:** "The first 40 years of non-invasive medical near-infrared spectroscopy (NIRS) research: from localized brain/muscle oximetry to wearable-wireless functional NIRS/DOT". 2f-NIRS 2017: 4^{ème} réunion annuelle du réseau français des utilisateurs du NIRS. Lille, Francia.

2) DIREZIONE O PARTECIPAZIONE ALLE ATTIVITA' DI UN GRUPPO DI RICERCA CARATTERIZZATO DA COLLABORAZIONI A LIVELLO NAZIONALE O INTERNAZIONALE

Il finanziamento della ricerca (1988-2021) è stato garantito da: Università degli Studi dell'Aquila, Agenzie internazionali (EU) e nazionali (MIUR), e sponsor industriali (Sclavo, Italia; Hamamatsu Photonics, Giappone; Ohmatex, Danimarca; Technogym, Italia)

➤ PARTECIPAZIONI A PROGETTI DI RICERCA NAZIONALI ED INTERNAZIONALI

• COLLABORAZIONI INTERNAZIONALI RATIFICATE DA ACCORDI BILATERALI

- a. **1988-1999** Italia-USA. La NIRS è stata un obiettivo dell'area XVI (Salute del bambino. Medicina perinatale) della cooperazione USA-Italia in Salute e Biomedicina. (Responsabili USA: E. Gratton e R. Traystman; responsabile italiano: M. Ferrari).
- b. **1995-1999** Italia-Giappone. Accordo quadriennale di cooperazione scientifica e tecnologica Italia-Giappone per la tematica "Optical diagnosis of living tissues" (Responsabile giapponese: Y. Yamada; responsabile italiano: M. Ferrari).
- c. **2007-2009** Italia-Quebec. Programma di scambio. The Italian Ministry of Foreign Affairs and the Ministry of International Relations of Quebec. "Exploring cerebral plasticity by adopting new optical imaging techniques as compared to classical functional imaging".

• INVESTIGATORE PRINCIPALE O RESPONSABILE DELLA UNITÀ DI RICERCA LOCALE

a. MIUR

- ✓ **1992-1995** Progetto Nazionale "Patologia da radicali liberi e degli equilibri redox", Ricerca dal titolo: "Spettroscopia EPR *in vivo* a bassa frequenza ed imaging di radicali liberi sensibili alle tensioni di ossigeno" (Responsabile locale: M. Ferrari).
- ✓ **1998-1999** Progetto Nazionale "Regolazione redox di processi cellulari", Ricerca dal titolo: "Stress ossidativo in un modello sperimentale di shock: aspetti morfologici, bioenergetici e fisiopatologici" (Responsabile locale: M. Ferrari).
- ✓ **2000-2001** PRIN Progetto Nazionale "Sviluppo e valutazione pre-clinica di sistemi ottici ad acquisizione multipla per il monitoraggio non invasivo dell'emodinamica e del metabolismo ossidativo nel muscolo e nel cervello" (Coordinatore nazionale: Prof. A. Cubeddu, Politecnico di Milano; Coordinatore locale: M. Ferrari).

b. UNIONE EUROPEA

- ✓ **1993-1996**. "Near infrared spectrophotometry and imaging". Azione Concertata nell'ambito del III Programma Quadro dell'Unione Europea BIOMED A (Responsabile: P. Rolfe, Università di Keele, UK; M. Ferrari, membro del comitato di gestione del progetto).
- ✓ **1996-1998**. "Near infrared spectrophotometry and imaging for the functional assessment of biological tissue". Progetto nell'ambito del IV Programma Quadro dell'Unione Europea BIOMED 2. (Responsabile: P. Rolfe, Università di Keele, UK; M. Ferrari, membro comitato di gestione del progetto e responsabile di sottoprogetto) (Contratto N. BMH4-CT96-1658).
- ✓ **1999-2001**. "Imaging of the language functions in the brain" (Contratto PS 1046) (Responsabile: R. Ilmoniemi, Università di Helsinki, Finlandia).
- ✓ **2001-2003** Thematic network "Optical methods for medical diagnosis and monitoring of diseases" della Unione Europea (Responsabile scientifico: Prof. R. Steiner, Università di Ulm, Germania) (Contratto QLC1-CT-2000-01464).

c. CNR

- ✓ **1989** Studio *in vivo* di radicali endogeni e di spin labels con tecniche di ESR imaging e di ESR a bassa frequenza per la valutazione dello stato anossico/ischemico di cellule ed organi. (Responsabile: M. Ferrari) (N. 89.02565.04).
- ✓ **1989-1991** Progetto Bilaterale Italia-USA. Studio del metabolismo e della emodinamica cerebrale mediante il monitoraggio ottico non invasivo nel vicino infrarosso. (Responsabile: M. Ferrari, Responsabile USA: R. Traystman, Johns Hopkins University) (N. 89.04165.04, 90.01475.04, 91.00253.04).
- ✓ **1992-1994**. Progetto Bilaterale Italia-USA. Studio della ossigenazione e del consumo di ossigeno cerebrale e muscolare mediante metodi ottici non invasivi utilizzando spettroscopia nel vicino infrarosso risolta e non risolta nel tempo. (Responsabile: M. Ferrari) (N. 92.01027.04, 93.00282.04, 94.02408.04).

- ✓ **1995-1996.** Progetto Bilaterale Italia-USA. Ottimizzazione delle metodiche di spettroscopia nel vicino infrarosso risolta nel tempo ed in frequenza per il monitoraggio non invasivo dell'ossigenazione e dell'emodinamica cerebrale e muscolare, e dello stato redox della citocromo ossidasi. (Responsabile: M. Ferrari; Responsabile USA: R. Traystman, Johns Hopkins University). (N. 95.00838.04, 96.00094.04).
- ✓ **1997.** Seminario bilaterale Italia/Giappone. Sapporo. "Recent advances and further developments of near-infrared optical methods for non invasive tissue monitoring in medicine". (Responsabile: M. Ferrari), nell'ambito di "Accordo quadriennale (1995-1999) Italia-Giappone. di cooperazione scientifica e tecnologica Italia-Giappone per la tematica "Optical diagnosis of living tissues" (Responsabile giapponese: Y. Yamada; responsabile italiano: M. Ferrari).

d. NATO

- ✓ **1991-1992.** "Brain hemodynamics study by non invasive near infrared optical monitoring". (Responsabili scientifici: R.J. Traystman, Johns Hopkins University e M. Ferrari) (CRG 910208).

e. COMITATO ITALIANO TELETHON

- ✓ **1992-1993.** "Non invasive evaluation of muscular oxygenation and oxygen consumption by fiber optic near infrared spectroscopy in neuromuscular diseases". (Responsabile: M. Ferrari) (Progetto 183).
- ✓ **1994-1995.** "Evaluation of the results of the muscular dystrophy physiotherapy treatment by near infrared spectroscopy". (Responsabile: M. Ferrari) (Progetto 501).

f. CONFERENZA DEI RETTORI DELLE UNIVERSITÀ ITALIANE

- ✓ **1997-1999** Programma Vigoni (collaborazione Italia-Germania). "Studio funzionale del cervello nell'uomo mediante spettroscopia nel vicino infrarosso". (Responsabili Scientifici: Prof. A. Villringer -Department of Neurology, Charité University Medicine Berlin, Berlin, Germany e M. Ferrari).

g. CONTRIBUTI PRIVATI

- ✓ **1997-1998** Fondazione Cassa di Risparmio della Provincia dell'Aquila. Progetto: Ottimizzazione delle strategie diagnostiche e terapeutiche medico/chirurgiche in pazienti con malattie cerebrovascolari mediante spettroscopia a fibre ottiche non invasiva. (Responsabile: M. Ferrari).
- ✓ **2005-2012** Hamamatsu Photonics K.K. (Japan). Progetto: "Evaluation of skeletal muscle oxidative metabolism and hemodynamic response of brain prefrontal cortex during motor tasks of different complexity by near infrared spectroscopy" (Responsabili: M. Ferrari, V. Quaresima).

• CO-INVESTIGATORE O MEMBRO DELL'UNITÀ DI RICERCA LOCALE

- ✓ **2015-2018:** Progetto di ricerca con l'industria "Ohmatex ApS" (Viby, Denmark) per il progetto dal titolo: "Development and validation of the NIRS technology as a means of assessing oxidative metabolism in muscle tissue of astronauts at rest and during exercise." <http://www.ohmatex.dk/?p=1611>. (Responsabile Prof.ssa V. Quaresima).
- ✓ **2014-2016:** Responsabile del progetto di ricerca finanziato dalla Fondazione Cassa di Risparmio (L'Aquila) (Bando 2014) per il progetto dal titolo: "Nuovi approcci riabilitativi multidisciplinari dell'ictus: impiego di test cognitivi concomitantemente all'utilizzo di una tecnica non invasiva di neuroimaging funzionale (fNIRS)". (Responsabile Prof.ssa V. Quaresima).
- ✓ **2005-2012:** Progetto di ricerca con l'industria Hamamatsu Photonics K.K. (Hamamatsu City, Japan) per il progetto dal titolo: "Evaluation of skeletal muscle oxidative metabolism and hemodynamic response of brain prefrontal cortex during motor tasks of different complexity by near infrared spectroscopy". (Responsabile Prof.ssa V. Quaresima).
- ✓ **2004-2008:** "Academic Frontier Project" in collaborazione con "Japan Women's College of Physical Education" (Tokyo, Japan) dal titolo: "Integrative study of circulatory regulation during exercise". (Responsabile Prof.ssa V. Quaresima).
- ✓ **30 gennaio 2006- 29 gennaio 2008:** Programma di Ricerca di Interesse Nazionale - PRIN 2005 (Italia) dal titolo: "fNIRS per lo studio non invasivo dell'attivazione della corteccia cerebrale dell'uomo durante diversi stimoli". (Coordinatore nazionale: Prof. A. Cubeddu, Politecnico di Milano; Responsabile scientifico dell'Unità di Ricerca dell'Università dell'Aquila Prof.ssa V. Quaresima).

- ✓ **2005:** Progetto di ricerca con l'industria Technogym S.p.A. (Cesena, Italia) per il progetto dal titolo: "Valutazione dell'effetto di diverse modalità di esercizio con Technogym Cardio Wave e altri attrezzi cardiovascolari sul metabolismo ossidativo di diversi gruppi muscolari mediante spettroscopia nel vicino infrarosso". (Responsabile Prof.ssa V. Quaresima).
- ✓ **1991-1992.** Studio e progettazione di strumentazione per spettroscopia risolta nel tempo, applicata a mezzi densi diffondenti e assorbenti, con particolare riguardo al monitoraggio non invasivo della ossigenazione cerebrale e muscolare. (Responsabile scientifico: Prof. P. Bruscazioni, Università di Firenze) (CNR 91.02086.11, 92.03264.11).

3) PARTECIPAZIONE A COMITATI EDITORIALI DI RIVISTE

- **1993-presente:** Membro dell'Editorial Advisory Board **Journal of Near Infrared Spectroscopy** Print ISSN: 0967-0335 <http://www.impublications.com/content/journal-near-infrared-spectroscopy> (IM Publications)
- **2012-presente:** Review Editor **Frontiers in Brain Imaging Methods** ISSN: 1662453X http://www.frontiersin.org/Brain_Imaging_Methods (Frontiers)
- **2012-presente:** Editorial Board Member of **Biomedical Spectroscopy and Imaging** ISSN print: 2212-8794; ISSN online: 2212-8808 <http://www.iospress.nl/journal/biomedical-spectroscopy-and-imaging/> (IOS Press)
- **2017-presente:** Review Editor of **Frontiers in Human Neuroscience**, ISSN: 16625161. <http://journal.frontiersin.org/journal/human-neuroscience>
- **1996-2019:** Editorial Board Member of **Journal of Biomedical Optics** ISSN: 1083-3668 <http://spie.org/x866.xml> (SPIE)
- **1996-2004:** Editorial Board Member of **Physics in Medicine and Biology** ISSN: 001319155

4) ATTIVITA' COME GUEST EDITOR DI NUMERI SPECIALI DI RIVISTE INTERNAZIONALI

- **2016** Co-editore del fascicolo speciale (che include 15 articoli) "Clinical Near-Infrared Spectroscopy and Imaging". Editori: **Ferrari M**, Culver J, Y. Hoshi, H. Wabnitz. *Journal of Biomedical Optics*. Volume 21 (9) settembre
- **2016** Co-editore del fascicolo speciale (che include 14 articoli) "Special Section on Clinical Near-Infrared Spectroscopy and Imaging of the Brain". Editori: **Ferrari M**, Culver J, Hoshi Y, Wabnitz H. *Neurophotonics*. Volume 3 (3) luglio-settembre
- **2014** Co-editore del fascicolo speciale (che include 59 articoli, 636 pagine) "Special issue Celebrating 20 Years of Functional Near Infrared Spectroscopy (fNIRS)" Editori: Boas D, Elwell, **Ferrari M**, Taga G. *Neuroimage*. Volume 85, Part 1, Pages 1-636 (15 January 2014)
- **2012** Co-editore del fascicolo speciale (che include 17 articoli, 254 pagine) "Medical near infrared spectroscopy 35 years after the discovery". Editori: **Ferrari M**, Norris KH, Sowa MG. *Journal of Near Infrared Spectroscopy*. Volume 20, fascicolo 1, 2012
- **2007** Co-editore del fascicolo speciale "Pioneers in biomedical optics: special section honoring Professor Frans F. Jobsis of Duke University". Editori: Delpy DT, **Ferrari M**, Piantadosi CA, Tamura M. *Journal of Biomedical Optics*. Volume 12, fascicolo 6, 2007.

5) ATTIVITA' COME REVISORE SCIENTIFICO

- **Revisore per riviste scientifiche internazionali:**
Annals of the New York Academy of Sciences, Brain Research, European Journal of Applied Physiology, Medical & Biological Engineering & Computing, Frontier in Human Neurosciences, Intensive Care Medicine, Journal of Applied Physiology, Journal of Cerebral Blood Flow and Metabolism, Journal of Electromyography and Kinesiology, Journal of Neuroscience Methods, Medicine & Science and Sports & Exercise, NeuroImage, Neurophotonics, Neurorehabilitation & Neural Repair, Neuroscience, Physiological Measurements, Physics in Medicine & Biology, PLOS Biology, Proceedings of the National Academy of Sciences (U.S.A), Scientific Reports, Stroke.
- **Revisore per agenzie di ricerca internazionali:**
 - Belgio: Eurostar; FWO - Research Foundation Flanders.
 - Canada: Canadian Institutes of Health Research.
 - Danimarca: 2011-2013. Membro del "Peer review panel of the Danish Council for Strategic Research" (DK).

- Francia: French National Research Agency.
 - Germania: Laserlab Europe.
 - Svizzera: Politecnico Federale di Losanna; Swiss National Science Foundation; Japanese-Swiss Science and Technology Cooperation program.
 - UK: The Leverhulme Trust; Medical Research Council; Wellcome Trust; Action Research; Engineering and Physical Science Research Council; Royal Society; Sparks-The children's medical research charity.
 - UK: 2010-2012. Membro del "Engineering and Physical Science Research Council College".
 - USA: National Science Foundation.
- *Revisore di tesi di dottorato nazionali ed internazionali*
 - *Valutatore per la promozione accademica di ricercatori internazionali*

6) PARTECIPAZIONE AL COLLEGIO DEI DOCENTI DI DOTTORATO DI RICERCA

AA	DOTTORATO DI RICERCA (presso Ateneo dell'Aquila)
2021-2022	"Scienze della Salute e dell'Ambiente"
da 2013/2014 a 2019/2020	"Scienze della Salute e dell'Ambiente"
da 2007/2008 a 2012/2013	"Imaging Molecolare ed Ultrastrutturale"
da 1995/1996 a 2006-2007	"Biotecnologie"
da 1990/1991 a 1994/1995	"Formazione e Trattamento di Immagini Biomediche"
da 1988/1989 a 1989-1990	"Enzimologia Applicata alle Scienze Mediche"

7) CONSEGUIMENTO DI PREMI E RICONOSCIMENTI PER L'ATTIVA' SCIENTIFICA ED AFFILIAZIONI A SOCIETA' SCIENTIFICHE

a) PREMI

- 1987 "Fogarty International Fellowship" to support the Postdoc at the Department of Anesthesiology and Critical Care, Faculty of Medicine, Johns Hopkins University, Baltimore, MD, USA

b) AFFILIAZIONI A SOCIETA' SCIENTIFICHE INTERNAZIONALI

- **1985-presente**: Membro "International Society on Oxygen Transport to Tissue"
- **2013-presente**: Membro "Functional Near Infrared Spectroscopy Society"

c) ATTIVITÀ PROFESSIONALI A CONGRESSI SCIENTIFICI INTERNAZIONALI

- **2022**: Biophotonics in Exercise Science, Sports Medicine, Health Monitoring Technologies, and Wearables III. (**Conference Program Committee**) San Francisco, California, USA, SPIE (Society of Photo-Optical Instrumentation Engineers), 22-27 January (Conference BO308).
- **2021**: Biophotonics in Exercise Science, Sports Medicine, Health Monitoring Technologies, and Wearables II. (**Conference Program Committee**) San Francisco, California, USA, SPIE (Society of Photo-Optical Instrumentation Engineers), 6-11 March (Conference BO308).

- **2020:** Biophotonics in Exercise Science, Sports Medicine, Health Monitoring Technologies, and Wearables. (**Conference Program Committee**) San Francisco, California, USA, SPIE (Society of Photo-Optical Instrumentation Engineers), 1-6 February (Conference 11237)
- **2019:** Optical Tomography and Spectroscopy of Tissue XIII (**Conference Program Committee**) San Francisco, California, USA, SPIE (Society of Photo-Optical Instrumentation Engineers), 2-7 February
- **2018:** 2nd International Neuroergonomics Conference (**Member of the Scientific Committee**) Drexel University, Philadelphia, PA USA; June 27-29
- **2018:** First Joint Italian French Workshop on “Cerebral Oximetry and functional Near-Infrared Spectroscopy (ifNIRS2018)” (**Member of the Scientific Committee**) (13-15 giugno, Politecnico di Milano, Milano, Italia)
- **2017:** Optical Tomography and Spectroscopy of Tissue XII (**Conference Program Committee**) San Francisco, California, USA, SPIE (Society of Photo-Optical Instrumentation Engineers)
- **2015:** Optical Tomography and Spectroscopy of Tissue XI (**Conference Program Committee**) San Francisco, California, USA, SPIE (Society of Photo-Optical Instrumentation Engineers)
- **2014-2021:** Membro del Board della “Functional Near Infrared Spectroscopy Society”
- **2013:** Optical Tomography and Spectroscopy of Tissue X (**Conference Program Committee**) San Francisco, California, USA, SPIE (Society of Photo-Optical Instrumentation Engineers)
- **2011:** Optical Tomography and Spectroscopy of Tissue IX (**Conference Program Committee**) San Francisco, California, USA, SPIE (Society of Photo-Optical Instrumentation Engineers),
- **2010:** “**Chair**” Functional Near-Infrared Spectroscopy: 2010 Conference (15-17 ottobre, Harvard University, Cambridge, MA, USA)
- **2004:** **Membro del Comitato Scientifico** di "32nd International Society on Oxygen Transport to Tissue meeting", (21-26 agosto, Bari, Italia)
- **2002:** **Membro del Program Committee** “BOPM 2002 Asian Symposium on Biomedical Optics and Photomedicine”, (21-23 October, Hokkaido University, Sapporo, Japan)
- **2001-2004:** Membro del Comitato Esecutivo di "International Society on Oxygen Transport to Tissue"
- **2001:** Workshop “Noninvasive investigation of muscle function” (**Conference Program Committee**) (4-6 ottobre) Marseille, France.
- **1998:** Seminario bilaterale Italia/Giappone. Recent advances and further developments of near-infrared optical methods for noninvasive tissue monitoring in medicine. (**Organizzatore italiano**) 24-28 febbraio 1998, Università di Hokkaido, Giappone.
- **1997:** "Photon propagation in tissues III", Biomedical Optics Society Europe '97, (**Conference Chair**), 4-8 settembre, San Remo, Italia.
- **1997:** "Optical tomography and Spectroscopy of Tissue: Theory, Instrumentation, and Human Studies II", Biomedical Optics 1997 Symposium, (**Conference Program Committee**), 8-14 febbraio, San José, California, USA.
- **1995:** "Optical tomography, photon migration, and spectroscopy of tissue and model media: theory, human studies, and instrumentation", Biomedical Optics 1995 Symposium, (**Conference Program Committee**), 5-7 febbraio, San José, California, USA.
- **1993:** "Quantification and localization using diffused photon in a highly scattering media", International Symposium on Biomedical Optics Europe, (**Conference Chair**), 1-5 settembre, Budapest, Ungheria.

8) INCARICHI DI RICERCA (FELLOWSHIP) PRESSO QUALIFICATI CENTRI DI RICERCA

- **Agosto-settembre 1991:** "**Visiting Associate Professor**", Department of Anesthesiology and Critical Care, Faculty of Medicine, Johns Hopkins University, Baltimore, MD, USA
- **Agosto-settembre 1989:** "**Visiting Associate Professor**", Department of Anesthesiology and Critical Care, Faculty of Medicine, Johns Hopkins University, Baltimore, MD, USA
- **Luglio 1987-gennaio 1988:** "**Visiting Assistant**", Department of Anesthesiology and Critical Care, Faculty of Medicine, Johns Hopkins University, Baltimore, MD, USA
- **Luglio 1986-giugno 1987:** "**Fogarty International Fellowship**" at the Department of Anesthesiology and Critical Care, Faculty of Medicine, Johns Hopkins University, Baltimore, MD, USA

9) DIDATTICA

a) UNIVERSITA' DEGLI STUDI DELL'AQUILA

• CORSI DI LAUREA

- AA 2008-2009/2021-2022: Corso di Diagnostica non invasiva e/o *imaging* molecolare (CI: Approfondimenti Biomedici Applicati alle Scienze Tecnico-Diagnostiche) presso Corso di Laurea Magistrale - Scienze delle Professioni Sanitarie Tecnico-Diagnostiche
- AA 2002-2003/2020-2021: Corso di Biochimica presso il Corso di Laurea Magistrale-Odontoiatria e Protesi Dentaria
- AA 2020-2021/2020-2021: Corso di Biochimica Applicata e Metodologie di Laboratorio (CI: Biochimica) presso Corso di Laurea Magistrale - Medicina e Chirurgia
- AA 2018-2019/2019-2020: Corso di Biochimica Applicata (CI: Biochimica) presso Corso di Laurea Magistrale - Medicina e Chirurgia
- AA 2009-2010/2018-2019: Corso di Metodologie di Laboratorio (CI: Medicina di Laboratorio e Diagnostica Integrata; Coordinatore) presso Corso di Laurea Magistrale - Medicina e Chirurgia
- AA 2003-2004/2008-2009: Corso di Biochimica (idoneità) presso Corso di Laurea Magistrale - Medicina e Chirurgia
- AA 1995-1996/1999-2000: Corso di Biochimica Clinica (CI: Medicina di Laboratorio) presso Corso di Laurea Magistrale - Medicina e Chirurgia
- AA 1989-1990/1993-1994: Corso di Biochimica Applicata (Corso Integrato Biochimica I) presso Corso di Laurea Magistrale - Medicina e Chirurgia presso Corso di Laurea Magistrale - Medicina e Chirurgia
- AA 1990-1991/1991-1992: Corso di Chimica Biologica (Corso Integrato Biochimica I) presso Corso di Laurea Magistrale - Medicina e Chirurgia
- AA 1988-1989/2001-2002: Corso di Chimica Biologica presso Corso di Laurea in Odontoiatria e Protesi Dentaria
- AA 2001-2002/2004-2005: Corso di Biochimica presso Corso di Laurea Interfacoltà di Biotecnologie
- AA 2003-2004/2004-2005: Corso di Biochimica cellulare e biochimica sistematica umana (C.I. Biochimica cellulare, biochimica sistematica umana e basi biochimiche degli stati patologici) presso Corso di Laurea Interfacoltà di Biotecnologie
- AA 2008-2009/2017-2018: Corso di Biochimica (CI: Biochimica, Chimica e Merceologia degli Alimenti) presso Corso di Laurea Triennale in Dietistica
- AA 2005-2006/2009-2010: Corso di Biochimica Applicata presso Corso di Laurea Triennale in Tecniche di Laboratorio Biomedico
- AA 2005-2006/2007-2008: Corso di Biochimica (CI: Fisica, Biologia, Genetica e Biochimica) presso Corso di Laurea Triennale in Infermiere
- AA 1999-2001: Corso di Biochimica Cellulare presso Diploma Universitario Tecnici in Biotecnologie
- AA 1998-2001: Corso di Biochimica Applicata presso Diploma Universitario Tecnico Sanitario di Laboratorio Biomedico
- AA 1994-2000: Corso di Biochimica Clinica presso Diploma Universitario Tecnico Sanitario di Laboratorio Biomedico
- AA 1993-1996: Corso di Biochimica Clinica presso Diploma Universitario in Scienze Infermieristiche
- AA 1994-1996: Corso di Biofisica presso Diploma Universitario Tecnico Sanitario di Laboratorio Biomedico

• SCUOLE DI SPECIALIZZAZIONE (S.S.)

- AA 2005-2006/2020-2021: Biochimica, Scuola di Specializzazione in Farmacologia
- AA 2008-2009/2020-2021: Biochimica, Scuola di Specializzazione in Fisica Medica
- AA 1999-2000/2007-2008: Biochimica Applicata, S.S. Biochimica Clinica
- AA 1997-1998/2007-2008: Biochimica Applicata, S.S. Patologia Clinica
- AA 1991-1992/2007-2008: Biochimica e Biofisica, S.S. Cardiologia
- AA 1997-1998/1999-2000: Biochimica Clinica, S.S. Patologia Clinica
- AA 1992-1993/1995-1996: Biochimica, S.S. Cardiochirurgia
- AA 2005-2006/2007-2008: Biochimica, S.S. Dermatologia e Venerologia
- AA 2005-2006/2007-2008: Ingegneria chimica biotecnologica, S.S. Ortopedia e Traumatologia

- **SCUOLE SPECIALI**

- **AA 1989-1990:** Chimica e Biochimica, Scuola Speciale in Tecnici di Cosmetologia
- **AA 1991-1994; 1995-1996:** Chimica e Biochimica, Scuola Speciale in Tecnici di Igiene Ambientale e del Lavoro
- **AA 1991-1996:** Chimica e Biochimica delle macromolecole, Scuola Speciale in Tecnici di Biotecnologie

b) UNIVERSITA' DEGLI STUDI DI ROMA SAPIENZA

- **AA 1980-1981/1981-1982:** Corso di Biologia presso la Scuola Speciale per Terapisti della Riabilitazione
- **AA 1980-1981/1981-1982:** Corso di Aspetti biochimici della funzione renale presso la I Scuola di Specializzazione di Nefrologia

c) UNIVERSITA' DEGLI STUDI DI CAMERINO AA 1982-1983/1984-1985:

- Corso Integrativo di Biochimica Applicata presso Corso di Laurea in Chimica e Tecnologie Farmaceutiche (Professore a contratto)

SINTESI DELL'ATTIVITÀ SCIENTIFICA

La complessiva attività di ricerca è stata oggetto finora di 203 pubblicazioni di cui **168 articoli in riviste con revisori** e 24 atti in estenso di convegno internazionale contenenti dati originali. I risultati delle ricerche sono stati oggetto di oltre 200 comunicazioni a Congressi Internazionali e Nazionali.

Citazioni 8257. H-index: 42. Documenti 174.

Fonte: Scopus 14/07/2022.

Citazioni 12487. H-index: 51. Documenti: 265.

Fonte: Google Scholar 14/07/2022.

RECENTI TEMATICHE DI RICERCA

Ha svolto e svolge, in collaborazione con il proprio gruppo, attività di ricerca finalizzata allo studio, mediante la spettroscopia a fibre ottiche multicanale nel vicino infrarosso (NIRS dall'inglese "near infrared spectroscopy") ed un approccio multidisciplinare, dei meccanismi vascolari e metabolici che regolano l'ossigenazione ed il metabolismo del tessuto cerebrale e muscolare. La tecnica ottica NIRS, che sfrutta le caratteristiche dell'interazione della luce nell'intervallo 700-1000 nm con i tessuti, consente di monitorare in maniera non invasiva lo stato di ossigenazione dell'emoglobina. Il Prof. Ferrari si è occupato dello sviluppo di questa metodologia fin dal 1982.

L'attività di ricerca degli ultimi dieci anni, svolta anche in collaborazione con gruppi di ricerca internazionali e nazionali, è stata rivolta principalmente sui seguenti argomenti:

- Sviluppo, validazione e valutazione di nuove applicazioni cliniche di ossimetri tissutali e strumentazioni di imaging molecolare ottico basate sull'uso della spettroscopia NIRS a fibre ottiche in onda continua, risolta nel tempo ed in frequenza.
- Studi di biochimica *in vivo* mediante NIRS funzionale (fNIRS), una tecnica di imaging cerebrale di tipo vascolare, per la comprensione delle funzioni della corteccia cerebrale prefrontale/frontale in risposta a stimoli cognitivi e motori di diversa complessità su volontari sani e pazienti.
- Studio del metabolismo ossidativo e dell'emodinamica a livello del muscolo scheletrico per contribuire alla comprensione del meccanismo della fatica muscolare durante esercizio e della cinetica del metabolismo ossidativo durante la fase di transizione riposo-esercizio.

Ha collaborato e pubblicato articoli scientifici oggetto di "peer review" insieme a diversi ricercatori (biochimici, bioingegneri, fisiologi, clinici, fisici medici, psicologi, scienziati dello sport) appartenenti alle seguenti istituzioni straniere:

- Queensland University of Technology, University of Sydney, and Edith Cowan University (**Australia**)
- Centre de Médecine du Sport CCAS, and Université de Lyon, Montpellier-1 University (**France**)
- Humboldt-Universität zu Berlin (**Germany**)
- Hiroshima University Faculty of Medicine, Hokkaido University, Kyoto University, Kyushu University, Kanoya National Institute of Fitness and Sports, and University of Tokyo (**Japan**)
- Radboud University Nijmegen Medical Centre (**The Netherlands**)
- Qatar Orthopaedic and Sports Medicine Hospital (**Qatar**)
- Karolinska Institutet (**Sweden**)
- Université de Genève Faculté de Médecine, and University Hospital Zurich (**Switzerland**)
- University of Aberdeen, University College London, University of Essex, and University of Exeter (**United Kingdom**)
- Harvard Medical School, University of Georgia, University of Pennsylvania, University of Pittsburgh, and Tufts University (**USA**)

2010-PRESENTE

a) COLLABORAZIONI CON ISTITUZIONI INTERNAZIONALI/NAZIONALI

- Faculty of Health Sciences, University of Sydney, Lidcombe (Australia)
- School of Exercise, Biomedical and Health Sciences, Edith Cowan University, Joondalup (Australia)
- Montpellier-1 University, Montpellier (France)
- Research and Education Centre, Aspetar, Doha (Qatar)
- Harvard Medical School, Charlestown, Massachusetts (USA)
- University of Zurich (Switzerland)
- Dipartimento di Fisica, Politecnico di Milano (Italia)
- Dipartimento di Psicologia, Università degli Studi di Padova (Italia)
- Dipartimento di Scienze Motorie Umane e della Salute, Università degli Studi di Roma 4 (Italia)

b) RECENTI COLLABORAZIONI CON INDUSTRIE

- Artinis Medical Systems (The Netherlands) (www.artinis.com)
(validazione di strumentazione fNIRS a 28 canali)
- Ohmatex ApS, Viby (Denmark) (www.ohmatex.dk)
(validazione di “wearable integrated textile EMG and muscle oximetry”)

ATTIVITA' SCIENTIFICA IN DETTAGLIO

Dal punto di vista cronologico l'Enzimologia è stato l'interesse prevalente nei primi anni di addestramento scientifico presso l'Istituto di Chimica Biologica della I Università di Roma sotto la guida del Prof. Paolo Fasella. Dal 1978 l'attività di ricerca, svolta presso l'Università di Roma “Sapienza”, l'Istituto Superiore di Sanità, la “Johns Hopkins University” di Baltimora (USA) e dal 1988 presso l'Università dell'Aquila ed in collaborazione con numerose istituzioni italiane ed estere ed industrie internazionali, si è focalizzata principalmente su alcuni **aspetti avanzati della Biochimica Applicata e dell'Imaging Molecolare in vivo nell'uomo**. In particolare, sulla possibilità di monitorare in maniera non invasiva in un organismo vivente l'utilizzazione dell'ossigeno a livello cellulare. Data la quasi mancanza di tecniche non distruttive per studiare l'ossigenazione, ha contribuito a livello internazionale allo sviluppo di una tecnica spettroscopica la **spettroscopia a fibre ottiche nel vicino infrarosso (NIRS)** (700-1100 nm) in continua, risolta nello spazio, nel tempo ed in frequenza.

La NIRS, tenuto conto della relativa trasparenza dei tessuti a queste lunghezze d'onda e che l'assorbitore prevalente è l'emoglobina, consente di misurare in maniera non invasiva l'ossigenazione dell'emoglobina e lo stato redox della citocromo-c-ossidasi tissutale.

Gran parte del lavoro sperimentale è stato focalizzato sullo sviluppo e validazione della NIRS *in vivo* prima in modelli sperimentali animali e successivamente nell'uomo. Le ricerche hanno consentito:

- l'ottimizzazione di diverse strumentazioni a fibre ottiche per NIRS *in vivo* ed algoritmi per il monitoraggio quantitativo, sul tessuto cerebrale e muscolare intatto, del volume emoglobinico, della saturazione della emoglobina, dello stato redox della citocromo-c-ossidasi e del tempo di circolo;
- lo studio di alcuni aspetti della biochimica e fisiopatologia del cervello e del muscolo quali: i) la relazione fra lo stato redox della citocromo-c-ossidasi e la disponibilità in ossigeno cerebrale, ii) l'esercizio ed il consumo di ossigeno muscolare.

I 48 anni di attività scientifica possono essere così riassunti:

1974-1979. STUDI DI ENZIMOLOGIA CLINICA

- a) Purificazione di due enzimi del metabolismo purinico ipoxantina-guanina fosforibosiltransferasi (HGPRT) e fosforibosil pirofosfosintetasi (PRPPsintetasi) da globuli rossi umani con isolamento di tre varianti dell'HGPRT e chiarimento di alcuni aspetti della reazione di IMPpirofosforolisi catalizzata dall'HGPRT, in particolare l'attivazione da guanina e lo scambio IMP-GMP.
- b) Messa a punto di un originale metodo di dosaggio spettrofotometrico per la PRPPsintetasi.
- c) Messa a punto di un metodo di dosaggio della collagenasi da liquido sinoviale.
- d) Caratterizzazione degli isoenzimi della lattico deidrogenasi in sottopopolazioni di granulociti eosinofili ed in linfociti isolati da soggetti normali e patologici. È stato dimostrato un differente pattern elettroforetico in due sottopopolazioni di eosinofili aventi diversi recettori di superficie ed attività killer.

• 1989-1994. SVILUPPO DI METODI PER LA RILEVAZIONE *IN VIVO*, IN MODELLI SPERIMENTALI ANIMALI, DI RADICALI LIBERI MEDIANTE TECNICHE DI RISONANZA DI SPIN ELETTRONICO (ESR)

Studio del metabolismo dei radicali liberi esogeni e la loro localizzazione spaziale, dell'influenza delle tensioni di ossigeno sulla velocità metabolica di radicali liberi nitrossidi e della produzione in situ di radicali liberi endogeni in modelli sperimentali animali.

- a. Studio in vitro del ruolo antiossidante e pro-ossidante dell'acido ascorbico e del suo intermedio radicalico nel plasma umano a cui veniva aggiunto ferro esogeno, simulando lo stress ossidativo come conseguenza dei disordini del metabolismo dello ione metallico.
- b. Mediante un prototipo di “imager” ESR operante a bassa frequenza sviluppato nell'Università dell'Aquila, studio nel ratto della cinetica di assorbimento, distribuzione, riduzione ed eliminazione del PCA, un radicale nitrossido sensibile alle tensioni di ossigeno. Mappatura della distribuzione del PCA durante la cinetica di riduzione metabolica mediante proiezioni monodimensionali longitudinali e bidimensionali trasversali e longitudinali.

- c. Mediante spettroscopia ESR a bassa frequenza, determinazione *in vivo* della generazione del radicale ossido nitrico nella regione superiore dell'addome del topo in un modello sperimentale di shock settico.
- **1979-PRESENTE. SVILUPPO DI UNA TECNOLOGIA NON INVASIVA PER IL MONITORAGGIO DELLA SATURAZIONE DELL'EMOGLOBINA E DELLO STATO REDOX DELLA CITOCROMO C OSSIDASI NEI TESSUTI INTATTI ED IN PARTICOLARE QUELLO CEREBRALE E MUSCOLARE USANDO LA SPETTROSCOPIA NEL VICINO INFRAROSSO (NIRS).**

In collaborazione con laboratori ed industrie internazionali, è stata sviluppata la spettroscopia a fibre ottiche nel vicino infrarosso (NIRS) (700-1100 nm) in continua, risolta nello spazio, nel tempo ed in frequenza.

Queste metodiche, tenuto conto della relativa trasparenza dei tessuti a queste lunghezze d'onda e che l'assorbitore prevalente è l'emoglobina, consentono di misurare direttamente ed in maniera non invasiva l'ossigenazione dell'emoglobina e lo stato redox della citocromo-c-ossidasi tissutali.

- **1980-1982** In collaborazione con ENIRICERCHE (Monterotondo, Roma) sono stati costruiti strumenti originali che sono stati utilizzati in diversi modelli sperimentali. Varie situazioni circolatorie hanno confermato la possibilità di ottenere informazioni precise sulle variazioni di contenuto ed ossigenazione dell'emoglobina cerebrale e muscolare. Per la prima volta i dati spettrali sono stati correlati con altre misure della funzionalità circolatoria (pressione arteriosa, flusso e volume ematico locale). Le variazioni di trasmittanza diffusa osservate sono state spiegate sulla base di effetti fisiofarmacologici noti e sulle proprietà spettrali della emoglobina. Si è avuta inoltre evidenza diretta delle variazioni spettrali della citocromo-c-ossidasi misurando spettri sul cranio di ratto prima e dopo la sostituzione completa del sangue con una emulsione di trasportatori artificiali di ossigeno (perfluorocarboni-PFC). Si è potuta osservare una variazione dell'ampiezza della banda della citocromo-c-ossidasi al variare delle condizioni respiratorie in animali completamente privi di emoglobina.
È stato sviluppato un sistema per la misura continua del flusso ematico locale cerebrale utilizzando termistori riscaldati da impulsi brevi. Le emulsioni di PFC e la loro citotossicità sono state caratterizzate mediante microscopia elettronica ed analisi automatica della immagine
- **1983-1984** Costruzione di uno fotometro a fibre ottiche utilizzando 4 lunghezze d'onda per uso clinico. Questo strumento è stato il secondo al mondo ad essere utilizzato su pazienti dopo quello costruito dalla Duke University negli Stati Uniti. Misure di ossigenazione corticale su volontari durante la respirazione di diverse miscele di gas e la variazione dell'attività respiratoria.
Brevetto congiunto Eniricerche-Istituto Superiore di Sanità-CNR depositato in Italia ed esteso a diversi paesi.
- **1984-1988** Le potenzialità della NIRS come strumento di diagnostica non invasiva cerebrale sono state valutate presso la I Università di Roma su pazienti cerebrovascolari durante il test di compressione delle arterie carotidi e su neonati immaturi in terapia intensiva. Sono state esaminate le variazioni di contenuto e l'ossigenazione dell'emoglobina in diverse situazioni fisiopatologiche e definite le specifiche di strumenti per le due diverse aree cliniche. Queste esperienze sono servite all'Eniricerche, in collaborazione con una società di diagnostica medica del gruppo (Sclavo), per realizzare un fotometro di seconda generazione per uso clinico. Questi studi NIRS clinici sull'adulto sono stati i primi al mondo; quelli sul neonato sono stati i primi in Europa ed i secondi al mondo. Nel 1988, con la riorganizzazione industriale del gruppo ENI, terminò l'attività industriale di sviluppo della strumentazione NIRS in Italia.
Sulla base di queste ed altre successive sperimentazioni internazionali sono state sviluppate negli ultimi trenta anni diverse strumentazioni commerciali, chiamate ossimetri, che da molti anni vengono utilizzati nelle terapie intensive dell'adulto e del neonato e nelle camere operatorie di tutto il mondo. Industrie leader dell'ossimetria cerebrale sono attualmente quattro industrie americane (Medtronic, Edwards, Masimo, Nonin) e una giapponese (Hamamatsu Photonics). L'industria leader nell'ossimetria muscolare è Artinis (Olanda) con cui si è collaborato negli ultimi venti anni.
- **1986-1987** Soggiorno di studio presso il Dipartimento di Anestesiologia della Johns Hopkins University di Baltimora (USA).
 - Sviluppo e validazione di un algoritmo predittivo per la misura non invasiva della saturazione dell'emoglobina venosa cerebrale utilizzando una tecnica chemiometrica che sfrutta le proprietà delle derivate degli spettri nel vicino infrarosso.
 - Valutazione della sensibilità della misura del contenuto di emoglobina e del tempo di transito cerebrale, determinato dalla curva di clearance di un tracciante assorbente nel vicino infrarosso, a definire i limiti della dilatazione cerebrovascolare.

- Mediante spettri differenziali ottenuti su animali di laboratorio privi di emoglobina, evidenza della presenza di una larga banda attribuibile alla citocromo-c-ossidasi che può essere ossidata e ridotta al variare delle condizioni respiratorie. Individuati i rapporti fra la soglia di riduzione della banda della citocromo-c-ossidasi cerebrale, flussi ematici e potenziali evocati somatosensoriali.
- **1988-1992** Misure di spettroscopia risolta nel tempo per quantizzare il cammino ottico percorso dai fotoni in fantocci di diversa complessità, sul muscolo scheletrico e sulla testa di volontari in collaborazione con l'Università di Firenze.
Per primi al mondo, abbiamo dimostrato che:
 - i cammini ottici, a parità di geometrie, sono diversi nel tessuto cerebrale e muscolare;
 - esiste una dipendenza temporale della forma dell'impulso trasmesso nel muscolo dell'avambraccio in condizioni di riposo e durante ischemia, occlusione venosa ed esercizio;
 - le inaccurately del cammino ottico influenzano le misure di consumo di ossigeno muscolare ottenute combinando i dati spettrali in continua con le misure di cammino ottico.
 - la modellistica Monte Carlo è indispensabile a verificare le modalità di propagazione dell'impulso nei diversi tessuti;
 - è possibile misurare i coefficienti di assorbimento e di scattering del muscolo dalla forma dell'impulso trasmesso;
 - il cammino ottico nel cervello varia durante ipossia ipossica.
- **1989-1997** Messa a punto di metodi NIRS per quantizzare il consumo di ossigeno ed il flusso nell'avambraccio durante il riposo e durante la contrazione muscolare massimale.
- **1994-1995** Studio dell'ossigenazione di diversi gruppi muscolari della gamba e dell'avambraccio in soggetti sani ed affetti da distrofie muscolari durante esercizi standardizzati e durante la fase di recupero post-esercizio. Studi in collaborazione con Fondazione Don Gnocchi Firenze.
- **1994-1997** Validazione di un prototipo di ossimetro tissutale operante nel dominio delle frequenze per la misura dell'ossigenazione cerebrale e muscolare. In collaborazione con una industria americana (ISS, Urbana, Illinois, USA).
- **1996-1997** Determinazione della relazione tra lo stato redox della banda del rame della citocromo-c-ossidasi e l'ossigenazione dell'emoglobina nel cervello di un modello sperimentale animale. Studio in collaborazione con University College di Londra.
- **1996-1998** Studi per migliorare ed espandere l'accuratezza dei dati NIRS. Ottimizzazione dell'interfaccia fibra ottica-tessuto monitorato. Valutazione dell'effetto delle variazioni di temperatura sugli spettri di assorbimento dell'emoglobina, metemoglobina ed acqua per implementare gli algoritmi di quantizzazione dei cromofori nei fotometri NIRS commerciali. Identificazione e quantificazione del contrasto ottico intrinseco della mammella mediante spettroscopia in derivata seconda per implementare le potenzialità diagnostiche della mammografia ottica. Studi in collaborazione con University College di Londra e I Università di Roma.
- **1996-1999** Studio del metabolismo aerobico ed anaerobico di diversi gruppi muscolari della coscia e della gamba sottoposti a esercizi di intensità diversa sia su soggetti allenati che non allenati. Studio della correlazione tra la cinetica di deossigenazione muscolare e la produzione di lattato. L'inizio della deossigenazione muscolare è correlato con l'inizio dell'accumulo di lattato (effetto Bohr *in vivo*). Studi in collaborazione con CNR di Milano.
- **1997-1999** Valutazione della reattività cerebrovascolare in pazienti cerebrovascolari.
- **1996-presente** Studi di NIRS funzionale (fNIRS). La fNIRS è una tecnica di imaging cerebrale di tipo vascolare che, mediante strumentazione multicanale, riesce a mappare le variazioni di ossigenazione della corteccia cerebrale a seguito di stimoli di diversa complessità. È stata studiata la funzione della corteccia cerebrale prefrontale/frontale in risposta a stimoli cognitivi e motori di diversa complessità su volontari sani e pazienti.
Sono stati utilizzati prototipi fNIRS sviluppati da Politecnico di Milano e da Università di Nijmegen, e strumenti commerciali della Artinis (Olanda) e dell'Obelab (Corea).
- **2000-2004** Studio, mediante strumenti NIRS multicanale, della eterogeneità del consumo di ossigeno e del flusso nei muscoli dell'arto inferiore durante flessione plantare ed esercizio isometrico del quadricipite. Studi in collaborazione con l'Università di Nijmegen (Olanda) e di Tuft (USA).
- **2000-2008** Studio della correlazione della componente lenta del consumo di ossigeno sistemico con la deossigenazione del muscolo vasto laterale durante la corsa ed altre modalità di esercizio. Studi in collaborazione con CONI Roma.
- **2011-2020** Review su invito. Pubblicazione di sei review in importanti riviste internazionali. Gli articoli riguardano le tecniche e le diverse applicazioni dell'ossimetria NIRS e fNIRS. Queste review hanno avuto oltre 1800 citazioni.

- **2018-2020** Validazione di sensori per elettromiografia (EMG) indossabili e dell'ossimetria per il monitoraggio wireless integrato dell'attività del quadricipite femorale durante esercizi di forza e resistenza. Il sensore EMG è realizzato con tessuti "intelligenti". Studio in collaborazione con Ohmatex (Danimarca).
- **2019-presente** Utilizzazione di sistemi fNIRS wireless multicanale per l'imaging della corteccia prefrontale di soggetti anche in movimento (mobile neuroimaging). Studi in collaborazione con l'Università di Roma "Foro Italico" e industria Artinis (Olanda).
- **2020-presente** COVID-19. Pubblicazioni relative alla standardizzazione ed il corretto uso dell'ossimetria pulsata e dell'ossimetria cerebrale in particolare per i pazienti COVID-19.

PUBBLICAZIONI SU RIVISTE INTERNAZIONALI CON REVISORI

ANNO 2022

1. Silverston P, **Ferrari M**, Quaresima V. Pulse oximetry and the pandemic. *BMJ* (2022) 378:e071474 doi:10.1136/bmj-2022-071474
2. **Ferrari M**, Quaresima V, Scholkmann F. Letter to the Editor: Pulse oximetry, racial bias and statistical bias: further improvements of pulse oximetry are necessary. *Annals of Intensive Care* (2022) 12: 19.
3. Silverston P, **Ferrari M**, Quaresima V. Pulse oximetry in primary care: factors affecting accuracy and interpretation. *British Journal of General Practice*. (2022) 72 (716): 132-133.
4. **Ferrari M**, Quaresima V. Racial discrepancies in oximetry: where do we stand? The gold standard choice. *Anaesthesia* (2022). First published: 07 January 2022 doi.org/10.1111/anae.15661

ANNO 2021

5. Belluscio V, Casti G, **Ferrari M**, Quaresima V, Sappia M, Horschig J, Vannozzi G. Modifications in prefrontal cortex oxygenation in linear and curvilinear dual task walking: a combined fNIRS and IMUs study. *Sensors* (2021) 21(18): 6159.
6. **Ferrari M**, Quaresima V. The future of noninvasive neonatal brain assessment: the measure of cerebral blood flow by diffuse correlation spectroscopy in combination with near-infrared spectroscopy oximetry. *Journal of Perinatology* (2021) 41(11):2690-2691.
7. Scholkmann F, Restin T, **Ferrari M**, Quaresima V. The role of methemoglobin and carboxyhemoglobin in COVID-19: A Review. *Journal of Clinical Medicine* (2021) 10:50.

ANNO 2020

8. Quaresima V, **Ferrari M**. More on pulse oximetry for monitoring patients with COVID-19 at home. *Annals of the American Thoracic Society* (2020) 17:1496.
9. **Ferrari M**, Quaresima V. Hypoxemia in COVID-19: cerebral oximetry should be explored as a warning indicator for mechanically ventilated adults with COVID-19. *Respiratory Research* (2020) 21: 261.
10. Di Giminiani R, Cardinale M, **Ferrari M**, Quaresima V. Validation of a fabric-based thigh wearable EMG sensors and oximetry for monitoring quadriceps activity during strength and endurance exercises. *Sensors* (2020) 20: 4664.
11. Quaresima V, **Ferrari M**. COVID-19: efficacy of prehospital pulse oximetry for early detection of silent hypoxemia. *Critical Care* (2020) 24: 501.

ANNO 2019

12. Quaresima V, Farzam P, Anderson P, Farzam PY, Wiese D, Carp SA, **Ferrari M**, Franceschini MA. Diffuse correlation spectroscopy and frequency-domain near-infrared spectroscopy for measuring microvascular blood flow in dynamically exercising human muscles. *Journal of Applied Physiology* (1985). (2019) 127: 1328-1337.
13. Quaresima V, **Ferrari M**. A mini-review on functional near-infrared spectroscopy (fNIRS): Where do we stand, and where should we go? *Photonics* (2019) 6 (3): 87.
14. Quaresima V, **Ferrari M**. Functional near-infrared spectroscopy (fNIRS) for assessing cerebral cortex function during human behavior in natural/social situations: A concise review. *Organizational Research Methods*. (2019) 22: 46–68.

ANNO 2018

15. Lancia S, Choi J, Baek J, Mammarella S, Bianco D, Quaresima V, **Ferrari M**. Trail making test induces prefrontal cortex activation as revealed by a CW wearable-wireless fNIRS/DOT imager. *Advances in Experimental Medicine and Biology*. (2018) 1072: 139-144.
16. Perrey S, **Ferrari M**. Muscle oximetry in sports science. *Sports Medicine*. (2018) 48 (3): 597–616.
17. Lancia S, Cofini V, Carrieri M, **Ferrari M**, Quaresima V. Are ventrolateral and dorsolateral prefrontal cortices involved in the computerized Corsi Block Tapping test execution? An fNIRS study. *Neurophotonics*. (2018) 5(1): 011019.
18. Muthalib M, **Ferrari M**, Quaresima V, Kerr G, Perrey S. Functional near-infrared spectroscopy to probe sensorimotor region activation during electrical stimulation-evoked movement. *Clinical Physiology and Functional Imaging* (2018) 38: 816–822.
19. Carrieri M, Lancia S, Bocchi A, **Ferrari M**, Piccardi L, Quaresima V. Does ventrolateral prefrontal cortex help in searching for the lost key? Evidence from an fNIRS study. *Brain Imaging Behaviour* (2018) 12(3): 785-797.

ANNO 2016

20. **Ferrari M**, Culver JP, Hoshi Y, Wabnitz H. Special Section Guest Editorial: Clinical near-infrared spectroscopy and imaging. *Journal of Biomedical Optics*. (2016) 21 (9): 091301.
21. **Ferrari M**, Culver JP, Hoshi Y, Wabnitz H. Special Section Guest Editorial: Clinical near-infrared spectroscopy and imaging of the brain. *Neurophotonics* (2016) 3 (3): 031401.
22. Basso Moro S, Carrieri M, Avola D, Brigadoi S, Lancia S, Petracca A, Spezialetti M, **Ferrari M**, Placidi G, Quaresima V. A novel semi-immersive virtual reality visuo-motor task activates ventrolateral prefrontal cortex: a functional near-infrared spectroscopy study. *Journal of Neural Engineering*. (2016) 13(3): 036002.
23. Carrieri M, Petracca A, Lancia S, Basso Moro S, Brigadoi S, Spezialetti M, **Ferrari M**, Placidi G, Quaresima V. Prefrontal cortex activation upon a demanding virtual hand-controlled task: a new frontier for neuroergonomics. *Frontiers in Human Neurosciences*. (2016) 10: 53.

ANNO 2015

24. Muthalib M, Re R, Zucchelli L, Perrey S, Contini D, Caffini M, Spinelli L, Kerr G, Quaresima V, **Ferrari M**, Torricelli. Effects of increasing neuromuscular electrical stimulation current intensity on cortical sensorimotor network activation: a time domain fNIRS study. *PLoS ONE* (2015) 10(7): e0131951.
25. Val-Lailliet D, Aarts E, Weber B, **Ferrari M**, Quaresima V, Stoeckel LE, Alonso-Alonso M, Audette M, Malbert CH, Stice E. Neuroimaging and neuromodulation approaches to study eating behavior, prevent and treat eating disorders and obesity. *NeuroImage: Clinical*. (2015) 8: 1-31. doi: 10.1016/j.nicl.2015.03.016

ANNO 2014

26. **Ferrari M**, Bisconti S, Spezialetti M, Basso Moro S, Di Palo C, Placidi G, Quaresima V. Prefrontal cortex activated bilaterally by a tilt board balance task: a functional near-infrared spectroscopy study in a semi-immersive virtual reality environment. *Brain Topography*. (2014) 27: 353-365.
27. Boas DA, Elwell CE, **Ferrari M**, Taga G. Twenty years of functional near-infrared spectroscopy: introduction for the special issue. *Neuroimage*. (2014) 85: 1-5.
28. Basso Moro S, Bisconti S, Muthalib M, Spezialetti M, Cutini S, **Ferrari M**, Placidi G, Quaresima V. A semi-immersive virtual reality incremental swing balance task activates prefrontal cortex: a functional near-infrared spectroscopy study. *Neuroimage*. (2014) 85: 451-460.
29. Placidi G, Avola D, **Ferrari M**, Iacoviello D, Petracca A, Quaresima V, Spezialetti M. A low-cost real time virtual system for postural stability assessment at home. *Computer Methods and Programs in Biomedicine* (2014) 117: 322-33.

ANNO 2013

30. Basso Moro S, Cutini S, Ursini ML, **Ferrari M**, Quaresima V. Prefrontal cortex activation during story encoding/retrieval: a multi-channel functional near-infrared spectroscopy study. *Frontiers in Human Neurosciences*. (2013) 7, 925.
31. Quaresima V, **Ferrari M**, Fantini S. Accuracy of oxygen desaturation of hemoglobin in muscle by near-infrared oximeters. *Medicine and Science in Sports and Exercise*. (2013) 45: 1217.
32. Re R, Muthalib M, Contini D, Zucchelli L, Torricelli A, Spinelli L, Caffini M, **Ferrari M**, Quaresima V, Perrey S, Kerr G. Cerebral cortex activation mapping upon electrical muscle stimulation by 32-channel time domain functional near infrared spectroscopy. *Advances in Experimental Medicine and Biology*. (2013) 789: 441-447.

ANNO 2012

33. Quaresima V, Bisconti S, **Ferrari M**. A brief review on the use of functional near-infrared spectroscopy (fNIRS) for language imaging studies in human newborns and adults. *Brain and Language*. (2012) 121: 79-89.
34. Muthalib M, **Ferrari M**, Quaresima V, Nosaka K. Frontal cortex activation during electrical muscle stimulation as revealed by functional near-infrared spectroscopy (fNIRS). *Advances in Experimental Medicine and Biology*. (2012) 737:45-49.
35. **Ferrari M**, Norris KH, Sowa MG. Guest editorial. Medical near infrared spectroscopy 35 years after the discovery. *Journal of Near Infrared Spectroscopy*. (2012) v-vii.
36. **Ferrari M**, Quaresima V. Review: Near infrared brain and muscle oximetry: from the discovery to current applications. *Journal of Near Infrared Spectroscopy*. (2012) 20: 1-14.
37. **Ferrari M**, Quaresima V. A brief review on the history of human functional near-infrared spectroscopy (fNIRS) development and fields of application. *Neuroimage*. (2012) 63: 921-935.
38. Bisconti S, Di Sante G, **Ferrari M**, Quaresima V. Functional Near-Infrared Spectroscopy reveals heterogeneous patterns of language lateralization over frontopolar cortex. *Neuroscience Research*. (2012) 73:328-332.

ANNO 2011

39. Muthalib M, Lee H, Millet GY, **Ferrari M**, Nosaka K. The repeated bout effect: influence on biceps brachii oxygenation and myoelectrical activity. *Journal of Applied Physiology*. (2011) 110 (5):1390-1399.
40. **Ferrari M**, Muthalib M, Quaresima V. The use of near infrared spectroscopy in understanding skeletal muscle physiology: recent developments. *Philosophical Transactions Royal Society London A*. (2011) 369: 4577-4590.
41. Elwell CE, Boas DA, Cooper CE, Delpy D, **Ferrari M**, Quaresima V, Yodh AG. Britton Chance 1913-2010. *Philosophical Transactions Royal Society London A*. (2011) 369: 4380-4389.

ANNO 2010

42. Muthalib M, Jubeau M, Millet GY, Maffiuletti N, **Ferrari M**, Nosaka K. Biceps brachii muscle oxygenation in electrical muscle stimulation. *Clinical Physiology and Functional Imaging*. (2010) 30: 360-368.
43. Muthalib M, Lee H, Millet GY, **Ferrari M**, Nosaka K. Comparison between maximal lengthening and shortening contractions for biceps brachii muscle oxygenation and hemodynamics. *Journal of Applied Physiology*. (2010) 109: 710-720.

ANNO 2009

44. Felici F, Quaresima V, Fattorini L, Sbriccoli P, Filligoi GC, **Ferrari M**. Biceps brachii myoelectric and oxygenation changes during static and sinusoidal isometric exercises. *Journal of Electromyography Kinesiology*. (2009) 19:e1-e11.
45. Quaresima V, Giosuè P, Roncone R, Casacchia M, **Ferrari M**. Prefrontal cortex dysfunction during cognitive tests evidenced by functional near-infrared spectroscopy. *Psychiatric Research: Neuroimaging* (2009) 171: 252-257.
46. Quaresima V, **Ferrari M**. Clinical significance of cerebral oxygenation during exercise in patients with coronary artery disease. *Circulation Journal*. (2009) 73: 388.
47. Curcio G, Ferrara M, Limongi T, Tempesta D, Di Sante G, De Gennaro L, Quaresima V, **Ferrari M**. Acute mobile phones exposure affects frontal cortex hemodynamics as evidenced by functional near-infrared spectroscopy. *Journal of Cerebral Blood Flow & Metabolism*. (2009) 29: 903-910.
48. Quaresima V, **Ferrari M**. Evaluation of the dynamics of muscle oxygenation by near-infrared-based tissue oximeters. *Journal of Applied Physiology*. (2009) 107: 371.
49. Di Sante G, Limongi T, **Ferrari M**, Quaresima V. Progressive muscle fatigue induces loss in muscle force and persistent activation of frontal cortex as measured by multi-channel fNIRT. *International Journal of Bioelectromagnetism*. (2009) 11: 69-73.
50. Limongi T, Di Sante G, **Ferrari M**, Quaresima V. Detecting mental calculation related frontal cortex oxygenation changes for brain computer interface using multi-channel functional near infrared topography. *International Journal of Bioelectromagnetism*. (2009) 11: 86-90.

ANNO 2008

51. Demarie S, Quaresima V, **Ferrari M**, Billat V, Sbriccoli P, Faina M. Auxiliary muscles and slow component. *International Journal of Sports Medicine*. (2008) 29: 823-832.

ANNO 2007

52. Cardinale M, **Ferrari M**, Quaresima V. Gastrocnemius medialis and vastus lateralis oxygenation during whole body vibration exercise. *Medicine & Science in Sports & Exercise*. (2007) 39: 694-700.
53. Quaresima V, **Ferrari M**. Quantification of quadriceps O2 desaturation in response to short sprint cycling. *Medicine & Science in Sports & Exercise*. (2007) 39: 1205.
54. Cettolo V, **Ferrari M**, Biasini V, Quaresima V. Vastus lateralis O2 desaturation in response to fast and short maximal contraction. *Medicine & Science in Sports & Exercise*. (2007) 39: 1949-1959.
55. Delpy DT, **Ferrari M**, Piantadosi CA, Tamura M. Pioneers in biomedical optics: special section honoring Professor Frans F. Jobsis of Duke University. *Journal of Biomedical Optics*. (2007) 12(6):062101.
56. Wolf M, Quaresima V, **Ferrari M**. Progress of near infrared spectroscopy and topography for brain and muscle clinical applications. *Journal of Biomedical Optics*. (2007) 12(6):062104.

ANNO 2006

57. Quaresima V, **Ferrari M**. Quantification of calf oxygenation in paraplegic patients during passive leg movement. *Medicine & Science in Sports & Exercise*. (2006) 38: 189.
58. Zaramella P, Freato F, Quaresima V, **Ferrari M**, Bartocci M, Rubino M, Falcon E, Chiandetti L. Surgical closure of patent ductus arteriosus reduces the cerebral tissue oxygenation index in preterm infants: a near-infrared spectroscopy and Doppler study. *Pediatrics International*. (2006) 48: 305-312.
59. Contini D, Torricelli A, Pifferi A, Spinelli L, Taroni P, Quaresima V, **Ferrari M**, Cubeddu R. Multichannel time-resolved tissue oximeter for functional imaging of the brain. *IEEE-Transaction Instrumentation and Measurement*. (2006) 55: 85-90.
60. **Ferrari M**, Cettolo V, Quaresima V. Light source-detector spacing of near-infrared-based tissue oximeters and the influence of skin blood flow. *Journal of Applied Physiology*. (2006) 100: 1426.
61. Quaresima V, **Ferrari M**. Evaluation of the skin blood flow contribution to the non-invasive measurement of muscle oxygenation by near infrared spectroscopy. *Journal of Physiological Sciences*. (2006) 56: 267-268.
62. Calvisi V, Angelozzi M, Franco A, Mottola L, Crisostomi S, Corsica C, **Ferrari M**, Quaresima V. Influence of whole-body vibration static exercise on quadriceps oxygenation. *Advances in Experimental Medicine and Biology*. (2006) 578: 137-141.
63. Quaresima V, Crisostomi S, Mottola L, Angelozzi M, Franco A, Corsica C, Calvisi V, **Ferrari M**. Vastus lateralis metabolic response to explosive maximal isometric leg press exercise oxygenation. *Advances in Experimental Medicine and Biology*. (2006) 578: 167-171.
64. Quaresima V, Giosuè P, Roncone R, Casacchia M, **Ferrari M**. Exploring prefrontal cortex oxygenation in schizophrenia by functional near-infrared spectroscopy. *Advances in Experimental Medicine and Biology*. (2006) 578: 229-235.
65. Mottola L, Crisostomi S, **Ferrari M**, Quaresima V. Relationship between handgrip sustained submaximal exercise and prefrontal cortex oxygenation. *Advances in Experimental Medicine and Biology*. (2006) 578: 305-309.

ANNO 2005

66. Quaresima V, **Ferrari M**, Torricelli A, Spinelli L, Pifferi A, Cubeddu R. Bilateral prefrontal cortex oxygenation responses to a verbal fluency task: a multi-channel time-resolved near-infrared topography study. *Journal of Biomedical Optics*. (2005) 10(1):11012.
67. Zaramella P, Freato F, Quaresima V, **Ferrari M**, Vianello A, Giongo D, Conte L, Chiandetti L. Foot pulse oximeter perfusion index correlates with calf muscle perfusion measured by near-infrared spectroscopy in healthy neonates. *Journal of Perinatology*. (2005) 25: 417-422.

ANNO 2004

68. Quaresima V, **Ferrari M**, Franceschini MA, Hoimes ML, Fantini S. Spatial distribution of vastus lateralis blood flow and oxyhemoglobin saturation measured at the end of isometric quadriceps contraction by multichannel near-infrared spectroscopy. *Journal of Biomedical Optics*. (2004) 9:413-420.
69. Torricelli A, Quaresima V, Pifferi A, Biscotti G, Spinelli L, Taroni P, **Ferrari M**, Cubeddu R. Mapping of calf muscle oxygenation and haemoglobin content during dynamic plantar flexion exercise by multi-channel time-resolved near infrared spectroscopy. *Physics in Medicine & Biology*. (2004) 49:685-699.
70. **Ferrari M**, Mottola L, Quaresima V. Principles, techniques and limitations of near infrared spectroscopy. *Canadian Journal of Applied Physiology*. (2004) 29: 463-487.

ANNO 2003

71. Quaresima V, Lepanto R, **Ferrari M**. The use of near infrared spectroscopy in sports medicine. *Journal of Sports Medicine & Physical Fitness*. (2003) 43:1-13.
72. Grassi B, Pogliaghi S, Rampichini S, Quaresima V, **Ferrari M**, Marconi C, Cerretelli P. Muscle oxygenation and pulmonary exchange kinetics during cycling exercise on- transitions in humans. *Journal of Applied Physiology*. (2003) 95:149-158.

ANNO 2002

73. Quaresima V, **Ferrari M**. Quantitation of muscle oxygenation by near infrared spectroscopy methods. *European Journal of Applied Physiology*. (2002) 86: 283-284.
74. Quaresima V, Komiya T, **Ferrari M**. Differences in oxygen re-saturation of thigh and calf muscles after two treadmill stress tests. *Comparative Biochemistry and Physiology Part A*. (2002) 132:67-73, 2002.
75. Quaresima V, **Ferrari M**, van der Sluijs MCP, Menssen J, Colier WNJM. Lateral frontal cortex oxygenation changes during translation and language switching revealed by non-invasive near-infrared multi-point measurements. *Brain Research Bulletin*. (2002) 59: 235-243.
76. Quaresima V, **Ferrari M**. More on the use of near-infrared spectroscopy to measure muscle oxygenation in humans. *European Journal of Applied Physiology*. (2002) 88:294-295.
77. Quaresima V, **Ferrari M**. More on the use of near-infrared spectroscopy to evaluate stellate ganglion block. *Regional Anesthesia and Pain Medicine*. (2002) 27: 111-112.

ANNO 2001

78. Colier WNJM, Quaresima V, Wenzel R, van der Sluijs M, Oeseburg B, **Ferrari M**, Villringer A. Simultaneous near-infrared spectroscopy monitoring of left and right occipital areas reveals contra-lateral hemodynamic changes upon hemi-field paradigm. *Vision Research*. (2001) 41:97-102.
79. Quaresima V, **Ferrari M**. Cerebral oximetry. *Journal of Neurosurgery*. (2001) 94:864-866.
80. Quaresima V, Homma S, Azuma K, Shimizu S, Chiarotti F, **Ferrari M**, Kagaya A. Calf and shin muscle oxygenation patterns and femoral artery blood flow during dynamic plantar flexion exercise in humans. *European Journal of Applied Physiology*. (2001) 84: 387-394.
81. Quaresima V, Colier WNJM, van der Sluijs M, **Ferrari M**. Non-uniform quadriceps O₂ consumption revealed by near infrared multi-point measurements. *Biochemical and Biophysical Research Communications*. (2001) 285:1034-1039.
82. Demarie S, Quaresima V, **Ferrari M**, Sardella F, Billat V, Faina M. VO₂ slow component correlates with vastus lateralis deoxygenation and blood lactate accumulation during running. *The Journal of Sports Medicine and Physical Fitness*. (2001) 41: 448-455
83. Komiya T, Quaresima V, Shigematsu H, **Ferrari M**. A comparison of two spatially resolved near-infrared photometers in detecting tissue oxygen saturation: poor reliability at very low oxygen saturation. *Clinical Science*. (2001) 101: 715-718.

ANNO 2000

84. Binzoni T, Quaresima V, **Ferrari M**, Hiltbrand E, Cerretelli P. Human calf microvascular compliance measured by near-infrared spectroscopy. *Journal of Applied Physiology*. (2000) 88:373-385.
85. Quaresima V, Sacco S, Totaro R, **Ferrari M**. Non invasive measurement of cerebral hemoglobin oxygen saturation using two near infrared spectroscopy approaches. *Journal of Biomedical Optics*. (2000) 5:201-205.

ANNO 1999

86. Colier WNJM, Quaresima V, Wenzel R, **Ferrari M**, Oeseburg B, Villringer A. Cortical blood oxygenation changes in the left and right occipital area induced by selective visual stimuli in humans. *Advances in Experimental Medicine and Biology*. (1999) 471:35-41.

87. Grassi B, Quaresima V, Marconi C, **Ferrari M**, Cerretelli P. Blood lactate accumulation and muscle desoxygenation during incremental exercise. *Journal of Applied Physiology*. (1999) 87: 348-355.
88. Colier WNJM, Quaresima V, Oeseburg B, **Ferrari M**. Human motor-cortex oxygenation changes induced by cyclic coupled movements of hand and foot. *Experimental Brain Research*. (1999) 129:457-461.
89. Quaresima V, **Ferrari M**, Ciabattini M, Cantò U, Colonna R. Oxygenation kinetics of different leg muscle groups measured during a 100-meter sprint run by a portable near-infrared photometer. *Italian Journal of Sport Sciences*. (1999) 6:20-23.

ANNO 1998

90. Quaresima V, Matcher SJ, **Ferrari M**. Identification and quantification of intrinsic optical contrast for near-infrared mammography. *Photochemistry & Photobiology* (1998) 67:4-14.
91. Quaresima V, **Ferrari M**. Current status of electron spin resonance (ESR) for in vivo detection of free radicals. *Physics in Medicine and Biology*. (1998) 43:1937-1947.
92. Totaro R, Barattelli G, Quaresima V, Carolei A, **Ferrari M**. Evaluation of potential factors affecting the measurement of cerebrovascular reactivity by near-infrared spectroscopy. *Clinical Sciences*. (1998) 95:497-504.
93. Quaresima V, Springett R, Cope M, Wyatt JT, Delpy DT, **Ferrari M**, Cooper CE. Oxidation and reduction of cytochrome oxidase in the neonatal brain observed by in vivo near infrared spectroscopy. *Biochimica et Biophysica Acta*. (1998) 1366:291-300.
94. Binzoni T, Quaresima V, Barattelli G, Hiltbrand E, Gürke L, Terrier F, Cerretelli P, **Ferrari M**. Energy metabolism and interstitial fluid displacement in human gastrocnemius during short ischemic cycles. *Journal of Applied Physiology*. (1998) 85:1244-1251.
95. Quaresima V, **Ferrari M**. Assessment of quadriceps oxygenation in patients with myopathies by near infrared spectroscopy. *Neurology*. (1998) 51:1238-1239.

ANNO 1997

96. Cooper CE, Cope M, Quaresima V, **Ferrari M**, Nemoto E, Springett R, Matcher S, Amess P, Penrice J, Tyszczyk L, Wyatt J, Delpy DT. Measurement of cytochrome oxidase redox state by near infrared spectroscopy. *Advances in Experimental Medicine and Biology*. (1997) 413:63-73.
97. De Blasi RA, Almenröder N, Aurisicchio P, **Ferrari M**. Brain oxygenation monitoring during cardiopulmonary bypass by near infrared spectroscopy. *Advances in Experimental Medicine and Biology*. (1997) 413:97-104.
98. De Blasi RA, Almenröder N, **Ferrari M**. Comparison of two methods of measurement of forearm oxygen consumption by near infrared spectroscopy. *Journal of Biomedical Optics* (1997) 2:171-175.
99. **Ferrari M**, Binzoni T, Quaresima V. Oxidative metabolism in muscle. *Philosophical Transactions of the Royal Society Series B*. (1997) 352:677-685.
100. Sfäreni R, Boffi A, Quaresima V, **Ferrari M**. Near infrared absorption spectra of human deoxy- and oxy-haemoglobin in the temperature range 20-40°C. *Biochimica Biophysica Acta*. (1997) 1340:165-169.
101. Binzoni T, Cerretelli P, **Ferrari M**, Delpy DT. Metabolic studies of human skeletal muscle by near infrared spectroscopy: possible applications in space research. *International Journal of Sports Medicine*. (1997) 18: S312-S314.
102. Binzoni T, Quaresima V, Hiltbrand E, Gürke L, Cerretelli P, **Ferrari M**. Influence of repeated ischaemia/reperfusion cycles (ischaemic preconditioning) on human calf energy metabolism by simultaneous near infrared spectroscopy, ³¹P-NMR and ²³Na measurements. *Advances in Experimental Medicine and Biology*. (1997) 428:533-538.

ANNO 1996

103. Taddeucci A, Martelli F, Barilli M, **Ferrari M**, Zaccanti G. Optical properties of brain tissue. *Journal of Biomedical Optics*. (1996) 1:117-123.
104. Quaresima V, Takehara H, Tsushima K, **Ferrari M**, Utsumi H. In vivo detection of mouse liver nitric oxide generation by spin trapping electron paramagnetic resonance spectroscopy. *Biochemical Biophysical Research Communications*. (1996) 221:729-734.
105. **Ferrari M**, Quaresima V, Sotgiu A. Present status of electron paramagnetic resonance (EPR) spectroscopy/imaging for free radical detection. *Pflügers Archiv European Journal of Physiology*. (1996) 431: R267-R268.
106. De Blasi RA, **Ferrari M**, Antonelli M, Conti G, Almenröder N, Gasparetto A. O₂ consumption-O₂ delivery relationship and arteriolar resistance in the forearm of critically ill patients measured by near infrared spectroscopy. *Shock*. (1996) 6:319-325.
107. Quaresima V, Pizzi A, De Blasi RA, Ferrari A, **Ferrari M**. Influence of the treadmill speed/slope on quadriceps oxygenation during dynamic exercise. *Advances in Experimental Medicine and Biology*. (1996) 388:231-236.
108. De Blasi RA, Sfäreni R, Pietranico B, Mega AM, **Ferrari M**. Non invasive measurement of brachioradial muscle VO₂-blood flow relationship during graded isometric exercise. *Advances in Experimental Medicine and Biology*. (1996) 388:293-298.
109. **Ferrari M**, Delpy DT, Benaron DA. Guest Editorial: Special Section on Near Infrared Spectroscopy and Imaging of Tissues. *Journal of Biomedical Optics*. (1996) 1: 361.

ANNO 1995

110. De Blasi RA, Fantini S, Franceschini MA, **Ferrari M**, Gratton E. Cerebral and muscle oxygen saturation measurement by a novel frequency-domain near-infrared spectrometer. *Medical & Biology Engineering & Computing*. (1995) 33:228-230.
111. Ursini CL, Quaresima V, Bellato P, Sotgiu A, **Ferrari M**. Spin-labelled drug monitoring in circulating rat blood by electron paramagnetic resonance spectroscopy. *Applied Spectroscopy*. (1995) 49:256-257.
112. Sotgiu A, Alecci M, **Ferrari M**, Placidi G, Testa L. Low frequency electron paramagnetic resonance spectroscopy/ imaging: new experimental modalities and in vivo applications. *Magnetic Resonance in Medicine*. (1995) 6:51-55.
113. De Blasi RA, **Ferrari M**. Noninvasive measurement of forearm oxygen consumption by near-infrared spectroscopy. *Journal of Applied Physiology*. (1995) 78:1617-1618.
114. Quaresima V, De Blasi RA, **Ferrari M**. A customized optrode holder for clinical near infrared spectroscopy measurements. *Medical & Biology Engineering & Computing*. (1995) 33:627-628.
115. **Ferrari M**, Williams MA, Wilson DA, Thakor NV, Traystman RJ, Hanley DF. Cat brain cytochrome-c-oxidase redox changes induced by hypoxia after blood-perfluorocarbon exchange transfusion. *American Journal of Physiology*. (1995) 269:H417-H429.
116. **Ferrari M**, Quaresima V, De Blasi RA. Quantification of oxy and deoxy-hemoglobin concentration in tissue by time and frequency resolved spectroscopy. *Italian Journal of Biochemistry*. (1995) 44:192A-193A.
117. Quaresima V, Colonna R, Bandini P, Velletri M, Bernardi A, Spacca G, Cacchio A, **Ferrari M**. Non-Invasive muscle oxygenation monitoring during exercise by near infrared spectroscopy. *Italian Journal of Sport Sciences*. (1995) 1:21-27.

ANNO 1994

118. De Blasi RA, Alviggi I, Elwell C, Cope M, **Ferrari M**. Non invasive measurement of forearm oxygen consumption during exercise by near infrared spectroscopy. *Advances in Experimental Medicine and Biology*. (1994) 345:685-692.
119. De Blasi RA, **Ferrari M**, Natali A, Conti G, Mega AM, Gasparetto A. Noninvasive measurement of forearm blood flow and oxygen consumption by near-infrared spectroscopy. *Journal of Applied Physiology*. (1994) 76:1388-1393.
120. **Ferrari M**, Quaresima V, Ursini CL, Alecci M, Sotgiu A. In vivo electron paramagnetic resonance spectroscopy-imaging in experimental oncology: the hope and the reality. *International Journal of Oncology Biology and Physics*. (1994) 29:421-425.
121. Alecci M, **Ferrari M**, Quaresima V, Sotgiu A, Ursini CL. Simultaneous 280 MHz EPR imaging of rat organs during nitroxide free radical clearance. *Biophysical Journal*. (1994) 67:1274-1279.

ANNO 1993

122. **Ferrari M**, De Blasi RA, Safoue F, Wei Q, Zaccanti G. Towards human brain near infrared imaging: time resolved and unresolved spectroscopy during hypoxic hypoxia. *Advances in Experimental Medicine and Biology*. (1993) 333:21-31.
123. De Blasi RA, Cope M, Elwell C, Safoue F, **Ferrari M**. Non invasive measurement of human forearm oxygen consumption by near infrared spectroscopy. *European Journal of Applied Physiology*. (1993) 67:20-25.
124. Quaresima V, Ursini CL, Gualtieri G, Sotgiu A, **Ferrari M**. Oxygen-dependent reduction of a nitroxide free radical by electron paramagnetic resonance monitoring of circulating blood. *Biochimica et Biophysica Acta*. (1993) 1182:115-118.
125. Colacicchi S, Alecci M, Gualtieri G, Quaresima V, Ursini CL, **Ferrari M**, Sotgiu A. New experimental procedures for in vivo L-band and radio frequency EPR spectroscopy/imaging. *Journal Chemical Society, Perkin Transactions 2*. (1993) 11:2077-2082.
126. Delpy DT, **Ferrari M**. Near infrared spectroscopy research. *Pediatrics*. (1993) 92: 883.
127. Iannone A, Tomasi A, Quaresima V, **Ferrari M**. Nitroxides as metabolic and EPR imaging probes in biological model systems. *Research on Chemical Intermediates*. (1993) 19:715-731.

ANNO 1992

128. Colacicchi S, **Ferrari M**, Sotgiu A. In vivo electron paramagnetic resonance spectroscopy/imaging: first experiences, problems and perspectives. *International Journal Biochemistry*. (1992) 24: 205-214.
129. Minetti M, Forte T, Soriani M, Quaresima V, Menditto A, **Ferrari M**. Iron-induced ascorbate plasma oxidation as monitored by ascorbate free radical formation. No spin trapping evidences of the hydroxyl radical. *Biochemical Journal*. (1992) 282:459-465.
130. Quaresima V, Alecci M, **Ferrari M**, Sotgiu A. Whole rat electron paramagnetic resonance imaging of a nitroxide free radical by a radio frequency (280 MHz) spectrometer. *Biochemical Biophysical Research Communications*. (1992) 183:829-835.
131. **Ferrari M**, Wilson DA, Hanley DF, Traystman RJ. Effects of graded hypotension on cerebral blood flow, blood volume and mean transit time in the dog. *American Journal of Physiology*. (1992) 262:H1908-H1914.
132. **Ferrari M**, Wei Q, Carraresi L, De Blasi RA, Zaccanti G. Time-resolved spectroscopy of the human forearm. *Journal Photochemistry and Photobiology*. (1992) 16:141-153.
133. De Blasi RA, Quaglia E, Gasparetto A, **Ferrari M**. Muscle oxygenation by fast near infrared spectrophotometry (NIRS) in ischemic forearm. *Advances in Experimental Medicine and Biology*. (1992) 316:163-172.
134. De Blasi RA, Cope M, **Ferrari M**. Oxygen consumption of human skeletal muscle by near infrared spectroscopy during tourniquet-induced ischemia in maximal voluntary contraction. *Advances in Experimental Medicine and Biology*. (1992) 317:771-777.

ANNO 1991

135. Gallo P, Colacicchi S, **Ferrari M**, Gualtieri G, Sotgiu A. Electron paramagnetic resonance spectroscopy (EPR) on isolated rat heart: a technical note. *Cardioscience*. (1991) 2:9-12.
136. De Blasi RA, Quaglia E, **Ferrari M**. Skeletal-muscle oxygenation monitoring by near-infrared spectroscopy. *Biochemistry International*. (1991) 25:241-248.
137. **Ferrari M**, Quaresima V. Time gated near infrared tissue imaging. *NIR news*. (1991) 2:2-3.

ANNO 1990

138. **Ferrari M**, Hanley DF, Wilson DA, Traystman RJ. Cerebral cytochrome c oxidase copper band quantification in perfluorocarbon exchange transfused cats. *Advances in Experimental Medicine and Biology*. (1990) 277: 85-93.
139. **Ferrari M**, Colacicchi S, Gualtieri G, Santini MT, Sotgiu A. Whole mouse nitroxide free radical pharmacokinetics by low frequency electron paramagnetic resonance. *Biochemical Biophysical Research Communications*. (1990) 166: 168-173.
140. **Ferrari M**, Hanley DF, Wilson DA, Traystman RJ. Redox changes in cat brain cytochrome c oxidase after blood fluorocarbon exchange. *American Journal of Physiology*. (1990) 258: H1706- H1713.
141. Hanley DF, Cross K, Norris K, **Ferrari M**, Wilson DA, Traystman RJ. Non-invasive prediction of cerebral venous hemoglobin saturation. *Stroke*. (1990) 21: 167.

ANNO 1989

142. **Ferrari M**, Wilson DA, Hanley DF, Hartman JF, Traystman RJ, Rogers MC. Non invasive determination of hemoglobin saturation in dogs by derivative near infrared spectroscopy. *American Journal of Physiology*. (1989) 256: H1493-H1499.
143. **Ferrari M**, Wilson DA, Hanley DF, Hartman JF, Traystman RJ. Determination of cerebral venous hemoglobin saturation by derivative near infrared spectroscopy. *Advances in Experimental Medicine and Biology*. (1989) 247: 47-53.
144. **Ferrari M**, Wilson DA, Hanley DF, Traystman RJ. Near infrared determined cerebral transit time and oxy deoxy hemoglobin relationships during hemorrhagic hypotension in the dog. *Advances in Experimental Medicine and Biology*. (1989) 247: 55-62.
145. Hanley DF, Wilson DA, **Ferrari M**, Cross K, Borel CO, Hartmann J, Traystman R. The role of hemoglobin in cerebral oxygen delivery. *Annals of Neurology*. (1989) 26: 410-411.

ANNO 1988

146. Caiazza S, Fanizza C, **Ferrari M**. Ultrastructural aspects and clinical implications of PFC/non phagocytic cell interactions. *Biomaterials, Artificial Cells, Artificial Organs*. (1988) 16: 485-493.
147. **Ferrari M**, Hartmann JF, Hanley DF, Wilson DA, Traystman RJ. Non-invasive determination of cerebral venous hemoglobin saturation in the dog by near-infrared spectroscopy. *FASEB Journal*. (1988) 2: A508.

ANNO 1987

148. De Simone C, **Ferrari M**, Ferrarelli G, Rumi G, Pugnalone L, Sorice F. The effects of substance P on human eosinophil receptors and functions. *Annals of the New York Academy of Sciences USA*. (1987) 496: 226-232.
149. Carta F, **Ferrari M**, Giannini I. Inside a quantitative analysis of in vivo near infrared monitoring. *Advances in Experimental Medicine and Biology*. (1987) 215: 275-282.
150. **Ferrari M**, Zanette E, Sideri G, Giannini I, Fieschi C, Carpi A. Effects of carotid compression, as assessed by near infrared spectroscopy, upon cerebral blood volume and hemoglobin oxygen saturation. *Journal of the Royal Society of Medicine*. (1987) 80: 83-87.

ANNO 1986

151. **Ferrari M**, Zanette E, Giannini I, Sideri G, Fieschi C, Carpi A. Effects of carotid artery compression test on regional cerebral blood volume, hemoglobin oxygen saturation and cytochrome c oxidase redox level in cerebrovascular patients. *Advances in Experimental Medicine and Biology*. (1986) 200: 213-221.
152. **Ferrari M**, De Marchis C, Giannini I, Di Nicola A, Agostino R, Nodari S, Bucci G. Cerebral blood volume and hemoglobin oxygen saturation monitoring in neonatal brain by near infrared spectroscopy. *Advances in Experimental Medicine and Biology*. (1986) 200: 203-211.
153. De Simone C, **Ferrari M**, Pugnalone L, Ferrarelli G, Rumi G, Sorice F. Eosinophil mediated cellular cytotoxicity induced by Zymosan activated serum. *Immunology Letters*. (1986) 12: 37-41
154. **Ferrari M**, Carpi A. More on in situ monitoring. *Clinical Chemistry*. (1986) 32: 917.
- Caiazza S, Fanizza C, **Ferrari M**. Fluorocarbons comme substituts artificiels de sang: une etude au microscope electronique. *Revue Francaise de Transfusion et Immuno hematologie*. (1986) 29: 455-463.

ANNO 1985

155. **Ferrari M**, Giannini I, Sideri G, Zanette E. Continuous non invasive monitoring of human brain by near I.R. spectroscopy. *Advances in Experimental Medicine and Biology*. (1985) 191: 873-882.

ANNO 1984

156. Caiazza S, Fanizza C, **Ferrari M**. Fluosol 43 particle localization pattern in target organs of rats: an electron microscopy study. *Virchows Archiv A*. (1984) 404: 127-137.

ANNO 1983

157. De Simone C, **Ferrari M**, Sorice F. LDH isoenzyme distribution in human eosinophils. *International Archives of Allergy and Applied Immunology* (1983) 71: 193-199
158. **Ferrari M**, Giannini I, Carpi A, Fasella P. Non invasive near I.R. spectroscopy of brain: direct evidence of cytochrome c oxidase in hemoglobin free living rats. *Journal of Cerebral Blood Flow and Metabolism*. (1983) 3: S457-S458
159. Caiazza S, Fanizza C, **Ferrari M**. Rapid dimensional characterization of perfluorocarbon (PFC) particles by means of E.M. and automatic image analysis methods. *Micron and Microscopica Acta*. (1983) 14: 357-360
160. **Ferrari M**, Giannini I, Carpi A, Fasella P. Non invasive near I.R. spectroscopy of brain in fluorocarbon exchange transfused rats. *Physiological Chemistry and Physics and Medical NMR*. (1983) 15: 107-113.

ANNO 1982

161. De Simone C, **Ferrari M**, Meli D, Midiri G, Sorice F. Reversibility by L-carnitine of immunosuppression induced by an emulsion of soya bean oil, glycerol and egg lecithin. *Arzneimittel Forschung Drug Research*. (1982) 32: 1485-1488.
162. Giannini I, **Ferrari M**, Carpi A, Fasella P. Rat brain monitoring by near infrared spectroscopy: an assessment of possible clinical significance. *Physiological Chemistry and Physics*. (1982) 14: 295-305.
163. **Ferrari M**, Giannini I, Carta F, Argiolas L, Carpi A. Quantitative measurements of tissue blood flow by fast pulse heated thermistors. *Physiological Chemistry and Physics*. (1982) 14: 553-560.
164. De Simone C, **Ferrari M**, Lozzi A, Meli D, Ricca D, Sorice F. Vitamins and immunity: II. Influence of L-carnitine on the immune system. *Acta Vitaminol Enzymol*. (1982) 4: 135-140.

ANNO 1980

165. Sorice F, De Simone C, Meli D, **Ferrari M**, Morellini M, De Luca D, Taccone Gallucci M, Casciani CU. [Effect of vitamin B6 on some immune responses in chronic uremia (author's transl)]. *Acta Vitaminologica et Enzymologica*. (1980) 2: 171-178.

ANNO 1979

166. Giacomello A, Salerno C, **Ferrari M**, Giartosio A, Fasella PA. Collagen film for microdetermination of collagenase activity. *Physiological Chemistry and Physics*. (1979) 11: 169-173.

ANNO 1978

167. **Ferrari M**, Giacomello A, Salerno C, Messina EA. Spectrophotometric assay for phosphoribosyl-pyrophosphosphate synthetase. *Analytical Biochemistry*. (1978) 89:355 359.

PROCEEDINGS

- Di Giminiani R, Tilma Vistisen H, Klitgaard A, Arbjerg Heick R, Oestergard K, Yndgaard Soerensen K, Lancia S, **Ferrari M**, Quaresima V, Cardinale M. (2018). A wearable integrated textile EMG and muscle oximetry system for monitoring exercise-induced effects: a feasibility study. In: 2018 IEEE International Symposium on Medical Measurements and Applications (MeMeA), Rome, Italy, 11-13 June, Pages 282-286. DOI: 10.1109/MeMeA.2018.8438785
- Muthalib M, **Ferrari M**, Quaresima V, Kerr G, Perrey S. (2016). Neuromuscular electrical stimulation and voluntary wrist extension movements elicit similar sensorimotor cortex activation: a continuous-wave fNIRS study. In: 25th Conference of the International Functional Electrical Stimulation Society (IFESS), Special Session "Stimulating central nervous system as an adjuvant treatment to functional electrical stimulation therapy", La Grande-Motte, France, 8-10 June. Page 4
- Petracca A, Carrieri M, Avola D, Basso Moro S, Brigadoi S, Lancia S, Spezialetti M, **Ferrari M**, Quaresima V, Placidi G. (2015). A virtual ball task driven by forearm movements for neuro-rehabilitation. In: Proceedings of the 2015 IEEE International Conference on Virtual Rehabilitation (ICVR). Valencia, Spain, 9-12 June. Pages 162-163. doi: 10.1109/ICVR.2015.7358600.
- Placidi G, **Ferrari M**, Quaresima V. (2015). Integration of virtual reality and functional near-infrared spectroscopy (fNIRS) for assessing prefrontal cortex (PFC) activation in neurorehabilitation. In: 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society. Minisymposia paper N°1598. Milan, Italy, 25-29 August.
- Contini D, Caffini M, Re R, Zucchelli L, Spinelli L, Basso Moro S, Bisconti S, **Ferrari M**, Quaresima V, Cutini S, Torricelli A. (2013). Investigation of verbal and visual working memory by multi-channel time-resolved functional near-infrared spectroscopy. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 8578, Optical Tomography and Spectroscopy of Tissue X, pages 6; doi: 10.1117/12.2003777.
- Torricelli A, Pifferi A, Spinelli L, Cubeddu R, Quaresima V, **Ferrari M**. (2004). Functional cortical brain mapping by near infrared time-resolved spectroscopy. In: Biomedical Topical Meeting, OSA Technical Digest (Optical Society of America), paper FE5.
- Mottola L, **Ferrari M**, Quaresima V. (2004). Evaluation of forearm muscle groups recruitment during continuous or rhythmic isometric exercise by a continuous wave near infrared spatially resolved oximeter. In: Biomedical Topical Meeting, OSA Technical Digest (Optical Society of America), paper WF39.
- Torricelli A, Pifferi A, Spinelli L, Taroni P, Quaresima V, **Ferrari M**, Cubeddu R (2004). Multi-channel time-resolved tissue oximeter for functional imaging of the brain. In: Proceedings of the 21st IEEE Instrumentation and Measurement Technology Conference, 2004. IMTC 04. vol. 3, p. 1980-1983, Como, Italy, 18-20 May 2004, doi: 10.1109/IMTC.2004.1351475.
- Cubeddu R, Biscotti G, Pifferi A, Taroni P, Torricelli A, **Ferrari M**, Quaresima V (2003). Eight-channel time-resolved tissue oximeter for functional muscle studies. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 4955, Optical Tomography and Spectroscopy of Tissue V, pages 7; doi: 10.1117/12.478132.
- Cubeddu R, Biscotti G, Pifferi A, Taroni P, Torricelli A, **Ferrari M**, Quaresima V (2003). Functional muscle studies by dual-wavelength eight-channel time-resolved oximetry. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 5138, Photon Migration and Diffuse-Light Imaging, pages 6; doi: 10.1117/12.502086.
- Quaresima V, van der Sluijs MC, Menssen J, Grillotti L, **Ferrari M**, Colier WN (2001). Real-time noninvasive optical imaging of exercising muscle and brain upon cognitive stimuli. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 4250, Optical Tomography and Spectroscopy of Tissue IV, pages 9; doi: 10.1117/12.434514.
- Matcher SJ, Quaresima V, **Ferrari M** (1998). Quantitation methods for determining the intrinsic composition of breast tissue in vivo using near-infrared transillumination. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 3194, Photon Propagation in Tissues III, pages 9; doi: 10.1117/12.301054.
- Quaresima V, Franceschini MA, Fantini S, Gratton E, **Ferrari M** (1998). Difference in leg muscle oxygenation during treadmill exercise by a new near-infrared frequency-domain oximeter. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 3194, Photon Propagation in Tissues III, pages 5; doi: 10.1117/12.301042.

14. Colier WN, Quaresima V, Baratelli G, Cavallari P, van der Sluijs MC, **Ferrari M** (1997). Detailed evidence of cerebral hemoglobin oxygenation changes in response to motor cortical activation revealed by a continuous-wave spectrophotometer with 10-Hz temporal resolution. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 2979, *Optical Tomography and Spectroscopy of Tissue: Theory, Instrumentation, Model, and Human Studies II*, pages 7; doi: 10.1117/12.280269.
15. Quaresima V, Sfäreni R, Pizzi A, **Ferrari M** (1996). Measurement of the muscle optical properties on muscular dystrophy patients by a frequency-domain photometer. In *Biomedical Optical Spectroscopy and Diagnostics*, E. Sevick-Muraca and D. Benaron, eds., Vol. 3 of OSA Trends in Optics and Photonics Series (Optical Society of America), paper AP15.
16. Quaresima V, Pizzi A, De Blasi RA, **Ferrari A**, De Angelis M, Ferrari M. (1995). Quadriceps oxygenation changes during walking and running on a treadmill. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 2387, *Advances in Laser and Light Spectroscopy to Diagnose Cancer and Other Diseases II*, pages 8; doi: 10.1117/12.206829.
17. **Ferrari M**, De Blasi RA, Fantini S, Franceschini MA, Barbieri BB, Quaresima V, Gratton E (1995). Cerebral and muscle oxygen saturation measurement by a frequency-domain near-infrared spectroscopic technique. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 2389, *Optical Tomography, Photon Migration, and Spectroscopy of Tissue and Model Media: Theory, Human Studies, and Instrumentation*. Pages 7; doi: 10.1117/12.209950.
18. Hall JW, Quaresima V, **Ferrari M** (1995). Can we get more tissue biochemistry information from in-vivo near-infrared spectra? *Proc. SPIE* 2387, *Advances in Laser and Light Spectroscopy to Diagnose Cancer and Other Diseases II*. Pages 7; doi: 10.1117/12.206826.
19. **Ferrari M**, De Blasi RA, Ferrari A, Pizzi A, Quaresima V (1994). Near-infrared muscle functional monitoring. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 2081, *Optical Biopsy*, pages 7; doi: 10.1117/12.166820.
20. **Ferrari M**, Wei Q, De Blasi RA, Quaresima V, Zaccanti G (1993). Variability of human brain and muscle optical pathlength in different experimental conditions. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 1888, *Photon Migration and Imaging in Random Media and Tissues*, pages 7; doi: 10.1117/12.154666.
21. **Ferrari M**, De Blasi RA, Zaccanti G (1993). Quantitative measurement of skeletal muscle oxygenation by combined near-infrared time-resolved and -unresolved spectroscopy. *Proceedings Volume-1: Medical Optical Tomography: Functional Imaging and Monitoring*. pp. 576-588.
22. Araki R, Barilli M, Zaccanti G, Brusciaglioni P, **Ferrari M** (1993). Photon migration in a cylindrical phantom: numerical and experimental studies. Pages 8. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 1888, *Photon Migration and Imaging in Random Media and Tissues*. doi: 10.1117/12.154630.
23. Zaccanti G, Brusciaglioni; Martinelli F, Gurioli M, Salimbeni R, **Ferrari M** (1993). Imaging of biological tissues by means of a time-gated confocal scanning: experimental and numerical results. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 1888, *Photon Migration and Imaging in Random Media and Tissues*, pages 7; doi: 10.1117/12.154675.
24. **Ferrari M**, De Blasi RA, Brusciaglioni P, Barilli M, Carraresi L, Gurioli M, Quaglia E, Zaccanti G (1991). Near-infrared time-resolved spectroscopy and fast scanning spectrophotometry in ischemic human forearm. *Proceedings SPIE (Society of Photo-Optical Instrumentation Engineers)* 1431, *Time-Resolved Spectroscopy and Imaging of Tissues*, doi: 10.1117/12.44198.

ALTRE PUBBLICAZIONI

1. Quaresima V, **Ferrari M**. (2016) Medical near infrared spectroscopy: a prestigious history and a bright future. *NIR news* 27: 10–13. Doi: 10.1255/nirn.1575.
2. Di Sante G, Limongi T, **Ferrari M**, Quaresima V. (2009) Progressive muscle fatigue induces loss in muscle force and persistent activation of frontal cortex as measured by multi-channel fNIRT. *International Journal of Bioelectromagnetism* 11: 69-73.
3. Limongi T, Di Sante G, **Ferrari M**, Quaresima V. (2009) Detecting mental calculation related frontal cortex oxygenation changes for brain computer interface using multi-channel functional near infrared topography. *International Journal of Bioelectromagnetism* 11: 86-90.
4. Quaresima V, **Ferrari M**, Ciabattini M, Cantò U, Colonna R. (1999) Oxygenation kinetics of different leg muscle groups measured during a 100-meter sprint run by a portable near-infrared photometer. *Italian Journal of Sport Sciences* 6: 20-23.
5. **Ferrari M**, Quaresima V, De Blasi RA. (1995) Quantification of oxy and deoxy-hemoglobin concentration in tissue by time and frequency resolved spectroscopy. *Italian Journal of Biochemistry* 44: 192A-193A.
6. Quaresima V, Colonna R, Bandini P, Velletri M, Bernardi A, Spacca G, Cacchio A, **Ferrari M**. (1995) Non-Invasive muscle oxygenation monitoring during exercise by near infrared spectroscopy. *Italian Journal of Sport Sciences* 1: 21-27.
7. **Ferrari M**, Quaresima V. (1991) Time gated near infrared tissue imaging. *Near Infrared News* 2: 2-3.

CAPITOLI SU LIBRO

1. **Ferrari M**, Quaresima V, Sfäreni R, Ursini CL, Elwell C. (1994). Fundamentals of perinatal near-infrared spectroscopy. In: *Current Progress in Perinatal Medicine*; Edited by Cosmi EV, Di Renzo GC, Parthenon Publishing Group, New York, pp.845-850.
2. **Ferrari M**, Quaresima V, Ursini CL, Alecci M, Sotgiu A. (1994). In vivo studies of exogenous nitroxide free radical by low frequency electron paramagnetic resonance spectroscopy. In: *Advances in Free Radicals in Disease*; Edited by Tomasi A, Ursini F, Vannini V, pp.105-111.
3. Quaresima V, Sfäreni R, Hall JW, Matcher SJ, **Ferrari M**. (1996). Optical mapping of the human breast using second derivative near infrared spectroscopy. In: *Optical Society of America Trends in Optics and Photonics on Biomedical Optical Spectroscopy and Diagnostics*. Edited by: Sevick-Muraca E, Benaron, D. 3: 67-71.
4. Quaresima V, **Ferrari M**. (1999). In vivo electron paramagnetic resonance (EPR) low frequency spectroscopy/imaging of exogenous and endogenous free radicals. In: *Advances in Free Radicals in Disease IV*. Edited by: Pizzala R, Tomasi A, Vannini V; La Goliardica Pavese, pp. 285-290.

BREVETTO

Giannini I, **Ferrari M**, Carpi A, Fasella P. (1985). A multiple wavelength light photometer for non invasive monitoring, Italian Patent Request n. 22247 A/84 del 07/08/1984 con successiva concessione in Italia, Francia, Spagna, Regno Unito, Canada e USA.

CONGRESSI INTERNAZIONALI E NAZIONALI

2021

1. Belluscio V, Cartocci G, Terbojevich T, Di Feo P, Quaresima V, **Ferrari M**, Inguscio B, Babiloni F, Vannozzi G. Facilitating or disturbing? An explorative study to investigate the effect of auditory frequencies on cortical activity and postural sway. *International Society of Posture & Gait Research (ISPGR) World Congress 2022*. July 3–7, Montreal, Canada. Oral Presentation Session 0.3 – Abstract Proceedings Page 59.

2021

2. Belluscio V, Casti G, **Ferrari M**, Quaresima V, Horschig J, Sappia MF, Vannozzi G. (2021) Changes in pre-frontal cortex oxygenation during linear and curvilinear walking trajectories: a combined fNIRS and IMUs study. 8th International online Conference on Ambulatory Monitoring of Physical Activity and Movement (ICAMPAM 2021). 23-24 June. Poster 3-Q-164
3. Scholkmann F, Restin T, **Ferrari M**, Quaresima V. (2021) Problems of oxygen transport to tissue in COVID-19 patients: The relevance of methemoglobin and carboxyhemoglobin. *International Society on Oxygen Transport to Tissue (ISOTT) 2021 online Conference*, 26-30 July. Poster 4.06

2020

4. Vannozzi G, Belluscio V, Casti G, **Ferrari M**, Quaresima V. (2020) Modifications in prefrontal cortex oxygenation during different walking conditions: an assessment through fNIRS and wearable inertial sensors. *fNIRS DATABLITZ 12-14 October*. <https://fnirs2020.org/fnirs-datablitz-2020>
5. Belluscio V, Casti G, **Ferrari M**, Quaresima V, Vannozzi G. (2020) Cortical activation and human movement: a preliminary combined fNIRS and IMUs study during different walking modalities. *The yearly meeting of the Biomedical Photonics Network 2020*. *Progress in Biomedical Photonics*. 11 December. www.bmpn.ch

2019

6. Bianco D, van der Putte D, Mammarella S, Lancia S, Cortica A, **Ferrari M**, Quaresima V. (2019) Brite 24 outdoor/indoor testing: work-in-progress. *ARTscientific 2019*. The 3rd NIRS Artinis Symposium, Egmond aan Zee, The Netherlands 9-11 May
7. Mammarella S, Lancia S, Bianco D, Choi JK, Baek J, **Ferrari M**, Quaresima V. (2019). Prefrontal cortex challenged by multitasking: a functional near-infrared spectroscopy study. *2019 OHBM*. 25th Annual Meeting of the Organization for Human Brain Mapping. Poster # Th508, Rome, Italy, 9-13 June

2018

8. **Ferrari M**. (2018) The first 20 years (1982-2002) of brain oximetry and fNIRS in Italy. Historical Contribution. *ifNIRS 2018*. Joint Italian-French Workshop on Cerebral oximetry and functional near infrared spectroscopy (fNIRS). Milano, 13-15 June
9. Bianco D, Mammarella S, Lancia S, Manfredi F, Celi A, Choi J-K, **Ferrari M**, Quaresima V. (2018) Prefrontal cortex activation modulated by the complexity of anagram solution: an fNIRS/DOT study. *ifNIRS 2018*. Joint Italian-French Workshop on Cerebral oximetry and functional near infrared spectroscopy (fNIRS). Milan, 13-15 June
10. Mammarella S, Bianco D, Lancia S, Bocchi A, Choi J-K, Baek J, Piccardi L, Quaresima V, **Ferrari M**. (2018) Prefrontal cortex activation during a topographic memory task revealed by a wireless fNIRS/DOT system. *ifNIRS 2018*. Joint Italian-French Workshop on Cerebral oximetry and functional near infrared spectroscopy (fNIRS). Milan, 13-15 June
11. Choi JK, Baek J, Bianco D, Bocchi A, Lancia S, Mammarella S, Piccardi L, Quaresima V, **Ferrari M**. (2018) Diffuse optical tomography revealed prefrontal cortex activation by a walking memory task. *2018 OHBM*. 24th Annual Meeting of the Organization for Human Brain Mapping. Poster # 1965. Singapore (Malesia), 17-21 June

2017

12. Lancia S, Choi J, Mammarella S, Bianco D, Quaresima V, **Ferrari M**. (2017) Trail making test induces prefrontal cortex activation revealed by a cw wearable-wireless fNIRS/DOT imager. *45th Annual Meeting of the International Society on Oxygen Transport to Tissue (ISOTT) 2017*. Halle, Germany, 19-23 August.
13. Quaresima V, Lancia S, Choi J, Baek VJ, **Ferrari M**. (2017) High density wearable-wireless diffuse optical tomography for prefrontal cortex mapping during cognitive tasks. *Annual Meeting of the French network of functional Near Infra-Red Spectroscopy Conference*, Lille, France, 12-13 October

2016

14. Carrieri M, Lancia S, Petracca A, Spezialetti M, **Ferrari M**, Placidi G, Quaresima V. (2016) Integrazione di un compito di realtà virtuale semi-immersiva con la spettroscopia funzionale nel vicino infrarosso (fNIRS) per la neuro-riabilitazione. *XVI Congresso Nazionale Società Italiana di Riabilitazione Neurologica (SIRN)*. Ascoli Piceno, pp. 34-35, 7-9 aprile
15. Lancia S, Carrieri M, **Ferrari M**, Quaresima V. (2016) Shedding light on the human brain by fNIRS. *International OSA Network of Students (IONS@) Naples 2016*. Napoli, 6-8 luglio.
16. Carrieri M, Lancia S, Bocchi A, **Ferrari M**, Piccardi L, Quaresima V. (2016) Il test “Ricerca delle chiavi” attiva la corteccia prefrontale: uno studio di spettroscopia funzionale nel vicino infrarosso (fNIRS). *XXII Congresso Nazionale AIP-Sezione di Psicologia sperimentale*. Roma, 20-22 settembre
17. Carrieri M, Lancia S, Bocchi A, **Ferrari M**, Piccardi L, Quaresima V. (2016) The “Key Search Task” activates prefrontal cortex. *2016 Biennial meeting of the Society for functional Near-Infrared Spectroscopy*. Paris, France, 13-16 October
18. Lancia S, Carrieri M, **Ferrari M**, Quaresima V. (2016) Could “Corsi Block Tapping test” be considered a real working memory task? *2016 Biennial meeting of the Society for functional Near infrared Spectroscopy*. Paris, France, 13-16 October

2015

19. Petracca A, Carrieri M, Avola D, Basso Moro S, Brigadoi S, Lancia S, Spezialetti M, **Ferrari M**, Quaresima V, Placidi G. (2015). A virtual ball task driven by forearm movements for neuro-rehabilitation: prefrontal cortex activation assessed by functional near-infrared spectroscopy (fNIRS). In: *International Conference on Virtual Rehabilitation*. Poster Number 079, Valencia, Spain, 9-12 June
20. Placidi G, **Ferrari M**, Quaresima V (2015). Integration of Virtual Reality and functional Near-Infrared Spectroscopy (fNIRS) for Assessing Prefrontal Cortex (PFC) Activation in Neurorehabilitation. In: *37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*. Abstract: 26681598. Milan, Italy, 25-29 August

2013

21. Basso Moro S, Cutini S, Placidi G, **Ferrari M**, Quaresima V (2013). Prefrontal cortex (PFC) activation during semi-immersive virtual reality incremental swing and balance tasks revealed by functional near-infrared spectroscopy (fNIRS). In: *XV Congresso della Società Italiana di Neuroscienze*. p. P01-85, Roma, Italia, 3 - 5 ottobre

2012

22. Re R, Contini D, Zucchelli L, Torricelli A, Spinelli L, Caffini M, **Ferrari M**, Quaresima V, Muthalib M, Kerr G, Perrey S. (2012). Cerebral cortex activation mapping upon electrical muscle stimulation by 32-channel time domain functional near infrared spectroscopy. In: *The 40th Annual Meeting of the International Society on Oxygen Transport to Tissue ISOTT 2012*. p. 42, Bruges, Belgium, August 19-23.

23. **Ferrari M**, Quaresima V (2012). Muscle oxygen saturation monitoring by wireless near-infrared spectroscopy. (*Invited talk*). XXXII World Congress of Sports Medicine. Parallel Symposium. Methodologies and systems for evaluating and monitoring training and sports performance. Rome, September 27-30. In: *Medicina dello Sport* Vol. 65 p. 382.
24. Bisconti S, Cutini S, Caffini M, **Ferrari M**, Quaresima V, Contini D, Zucchelli L, Spinelli L, Torricelli A (2012). Prefrontal cortex is not activated by observation of disgusting and pleasant pictures: a multi-channel time-resolved functional near-infrared spectroscopy study in healthy subjects. In: Second biennial Functional Near Infrared Spectroscopy Conference. p. 146, London, UK, October 26-28
25. Basso Moro S, Cutini S, Bisconti S, Caffini M, **Ferrari M**, Quaresima V, Contini D, Re R, Zucchelli L, Spinelli L, Torricelli A (2012). Verbal and visual working memory investigated by multi-channel time-resolved functional near-infrared spectroscopy. In: Second biennial Functional Near Infrared Spectroscopy Conference. p. 143, London, UK, 26-28 October
- 2011**
26. Bisconti S, Di Sante G, De Carolis R, **Ferrari M**, Quaresima V (2011). Language processing lateralisation: investigation on the dorsolateral prefrontal cortex (DLPFC) by functional near infrared spectroscopy. In: 8th International Brain Research Organization World Congress. p. C331, Florence, Italy, July 14-18
27. Muthalib M, Jubeau M, Millet GY, Maffioletti NA, **Ferrari M**, Kerr G, Nosaka K (2011). Similar muscle O₂ demand during electrically evoked and maximal voluntary isometric contractions. In: 16th Annual European College of Sports Science Congress. p. 449, Liverpool, UK, July 6-9
- 2010**
28. Muthalib M, **Ferrari M**, Quaresima V, Nosaka K (2010). Frontal cortex activation during electrical muscle stimulation as revealed by functional near-infrared spectroscopy (fNIRS). In: Conference of the International Society on Oxygen Transport to Tissues (ISOTT). p. 34, Ascona (Switzerland), July 18-23
29. **Ferrari M** (2010). NIRS: A historical perspective. (*Invited Talk*). In: Functional Near Infrared Spectroscopy: 2010 Conference. Harvard University, Cambridge, MA, USA, October 15-17
30. Muthalib M, Lee H, Millet GY, **Ferrari M**, Nosaka K. (2010). The repeated bout effect: influence on biceps brachii oxygenation and myoelectrical activity. In: 15th annual European College of Sports Science Congress. p. 592, Antalya, Turkey, June 24-26
31. **Ferrari M** (2010). The use of near infrared spectroscopy in understanding skeletal muscle physiology: recent developments. (*Invited Talk*). In: Royal Society Theo Murphy International Scientific Meeting. Making Light Work: Illuminating the Future of Biomedical Optics. Kavli Royal Society Centre, Newport Pagnell, Buckinghamshire, UK, November 8-10
- 2009**
32. Limongi T, Di Sante G, **Ferrari M**, Quaresima V (2009). Detecting mental calculation related frontal cortex oxygenation changes for brain computer interface using multi-channel functional near infrared topography. In: Proceedings of the 7th International Symposium on Noninvasive Functional Source Imaging of the Brain and Heart. Rome, Italy, May 29-31
33. Di Sante G, Limongi T, **Ferrari M**, Quaresima V (2009). Progressive muscle fatigue induces loss in muscle force and persistent activation of frontal cortex as measured by multi-channel fNIRT. In: Proceedings of the 7th International Symposium on Noninvasive Functional Source Imaging of the Brain and Heart. Rome, Italy, May 29-31
34. Muthalib M, Jubeau M, Millet GY, Maffioletti NA, **Ferrari M**, Nosaka K (2009). Muscle oxygen demand in electrically evoked maximal isometric contractions of the elbow flexors. In: 14th Annual Congress of the European College of Sports Science. Oslo, Norway, June 24-28
35. **Ferrari M**, Di Sante G, Quaresima V (2009). Shifting of frontal cortex activation during intermittent maximal handgrip exercise revealed by functional near-infrared topography. (*Invited Talk*). In: 446 WE-Heraeus-Seminar. Workshop "Optical Imaging of Brain Function. Bad Honnef, Germany, December 7-10
- 2008**
36. Limongi T, Di Sante G, **Ferrari M**, Quaresima V. (2008) Non-invasive near infrared optical topography: A novel strategy for testing and monitoring cortical activation/oxygenation in translational neuroscience. International Meeting Needs and challenges in translational medicine: filling the gap between basic research and clinical applications. Rome, Italy. Poster 12 P. 89, 1-3 October
37. Quaresima V, Limongi T, Di Sante G, **Ferrari M** (2008). Prolonged intermittent maximal handgrip exercise induces loss in muscle force and persistent activation of frontal cortex as measured by functional Near-Infrared Spectroscopy. In: Academic Frontier Project International Symposium at Japan Women's College of Physical Education. p. 30-32, Setagaya-ku, Tokyo, Japan, November 29
- 2007**
38. Quaresima V, De Vivo C, **Ferrari M** (2007). Prolonged intermittent maximal handgrip exercise induces loss in muscle force and persistent activation of prefrontal cortex as measured by functional NIRS. In: 13th Annual Meeting of the Organization for Human Brain Mapping. p. 216, Chicago, USA, June 10-14
- 2006**
39. Zanuso S, Benvenuti P, Cecchinelli F, **Ferrari M**, Quaresima V (2006). Relationship between oxygen uptake and oxy-hemoglobin saturation on gluteus major and rectus femoris during graded aerobic exercise on a new cardiovascular equipment performed in different positions. In: 11th Annual Congress of the European College of Sports Science. p. 214, Lausanne, Switzerland, July 5-8
- 2005**
40. **Ferrari M**, Quaresima V (2005). Hemodynamic differences in the activation of the prefrontal cortex for maintaining muscle strength by functional NIRS. In: Workshop Optical Imaging of Brain Function. p. 3, Physikzentrum, Bad Honnef, Germany, November 2-4
41. Giosuè P, Roncone R, Casacchia M, **Ferrari M**, Quaresima V (2005). Prefrontal dysfunction in schizophrenia revealed by functional NIRS. In: The World Journal of Biological Psychiatry. Vol. 6, p. 168
- 2004**
42. Mottola L, **Ferrari M**, Quaresima V (2004). Evaluation of forearm muscle groups recruitment during continuous or rhythmic isometric exercise by a continuous wave near infrared spatially resolved oximeter. In: OSA Biomedical Topical Meetings. p. 40, Miami Beach, Florida, USA, April 14-17
43. Quaresima V, Roncone R, Casacchia M, **Ferrari M** (2004). Exploring prefrontal cortex oxygenation in schizophrenia by functional near-infrared spectroscopy. In: The 32nd Annual Meeting of the International Society on Oxygen Transport to Tissue (ISOTT 2004). p. 42, Bari, Italy, August 21-26
44. Torricelli A, Pifferi A, Spinelli L, Cubeddu R, Quaresima V, **Ferrari M** (2004). Functional cortical brain mapping by near infrared time-resolved spectroscopy. In: OSA Biomedical Topical Meetings. p. 5, Miami Beach, Florida, USA, April 14-17
45. Zaramella P, **Ferrari M**, Quaresima V, Freato F, Giongo D, Chiandetti L (2004). Peripheral perfusion and oxygenation assessment using near-infrared spectroscopy (NIRS) and the oximeter pulsatility index in healthy neonates. In: Pediatric Research, vol. 55, p. 749
46. Mottola L, Crisostomi S, **Ferrari M**, Quaresima V (2004). Relationship between handgrip sustained submaximal exercise and prefrontal cortex oxygenation. In: The 32nd Annual Meeting of the International Society on Oxygen Transport to Tissue. p. 96, Bari, Italy, August 21-26
- 2003**

47. Cubeddu R, Biscotti G, Pifferi A, Taroni P, Torricelli A, **Ferrari M**, Quaresima V (2003). Eight-channel time-resolved tissue oximeter for functional muscle studies. In: International Symposium on Biomedical Optics. p. 4955-4961, San Jose, CA, USA, January 26-28
- 2002**
48. Cubeddu R, Biscotti G, Pifferi A, Taroni P, Torricelli A, **Ferrari M**, Quaresima V (2002). Dual-wavelength, 8-channel time-resolved oximetry for functional muscle studies. In: Proceedings of Asian Symposium on Biomedical Optics and Photomedicine. p. 198-199, Hokkaido, Sapporo, Japan, October 21-23
49. Quaresima V, **Ferrari M** (2002). Insight into muscle oxidative metabolism gained by near infrared spectroscopy from single channel towards multi-channel approach. In: International Symposium on non-invasive vascular diagnosis. p. 26, Tokyo, Japan, November 8-9
50. Quaresima V, **Ferrari M** (2002). Near infrared spectroscopy for the detection of intracranial oxygenation changes in diagnostics and surgery. In: International Symposium on non-invasive vascular diagnosis. p. 21, Tokyo, Japan, November 8-9
- 2001**
51. van der Sluijs M, Menssen J, **Ferrari M**, Colier WJNM, Quaresima V (2001). Real time non invasive optical imaging of exercising muscle and brain upon cognitive stimuli. In: International Symposium on Biomedical Optics BIOS 2001. p. 69, San Jose, California, USA, January 20-26
52. Quaresima V, Colier WJNM, van der Sluijs M, Menssen J, **Ferrari M** (2001). A functional near-infrared imaging study of translation and language switching. In: NeuroImage, vol. 13, p. 590, Brighton, UK, June 10-14
53. Felici F, Sbriccoli P, Bazzucchi I, Figura F, **Ferrari M**, Quaresima V (2001). Biceps brachii O₂Hb de-saturation and surface EMG modifications during sustained constant and rhythmic isometric contractions. In: Workshop Non invasive investigation of muscle function. p. 141-142, Marseille, France, October 4-6
54. **Ferrari M**, Quaresima V (2001). Insight into muscle oxidative metabolism gained by near infrared: problems and prospects. (*Invited Talk*). In: Workshop Non invasive investigation of muscle function. p. 1-2, Marseille, France, October 4-6
55. Colier WJNM, van Beekvelt MCP, Ron W, Zange j, Vorgerd M, Quaresima V, **Ferrari M**, van Engelen B (2001). Near infrared spectroscopy applied to metabolic myopathies: a combined MRS and NIRS approach. In: Workshop Non invasive investigation of muscle function. p. 174-175, Marseille, France, October 4-6
56. Quaresima V, Franceschini MA, Hoimes ML, **Ferrari M**, Fantini S (2001). Near-infrared frequency-domain mapping of vastus lateralis blood flow and oxygen consumption before and after isometric contraction. In: Workshop Non invasive investigation of muscle function. p. 22-23, Marseille, France, October 4-6
57. Quaresima V, Fattorini L, Sbriccoli P, **Ferrari M**, Felici F (2001). Biceps brachii O₂Hb de-saturation during sustained rhythmic sub-maximal isometric contractions. In: 6th Annual Congress of the European College of Sport Science. p. 471, Cologne, Germany, July 24-28
58. Caulo M, Quaresima V, Grillotti L, Zeppillo D, Ferrari M, Masciocchi, Gallucci M (2001). Oxygen saturation during catheter angiography monitored by near infrared spectroscopy (NIRS). In: Neuroradiology. Vol. 43, p. 85, ISSN: 0028-3940, Ancona (Italy), September 13-16
59. Quaresima V, Franceschini MA, Hoimes ML, **Ferrari M**, Fantini S (2001). Spatial mapping of human vastus lateralis blood flow immediately after maximal voluntary contraction revealed by near infrared frequency domain spectroscopy. In: The 29th annual meeting of the International Society on Oxygen Transport to Tissue (ISOTT 2001). p. 113, Philadelphia, PA, USA, August 11-15
- 2000**
60. Mazza M, Quaresima V, De Risio A, Piro R, **Ferrari M**, Roncone R, Casacchia M. (2000) Modificazioni nel flusso cerebrale e studio delle funzioni esecutive in soggetti con schizofrenia. 5° Congresso Nazionale della Società Italiana di Psicopatologia, Roma, 23-27 febbraio. In: Giornale Italiano di Psicopatologia vol 6, abs. P172, p. 208
61. Quaresima V, Komiya T, **Ferrari M** (2000). Differences in oxygen re-saturation of thigh and calf muscles after treadmill stress test. In: The 28th annual meeting of the International Society on Oxygen Transport to Tissue (ISOTT 2000). p. 10, Nijmegen, The Netherlands, August 20-24
62. Faina M, Demarie S, Quaresima V, Sardella F, **Ferrari M**, De Angelis M, Di Cave P, Faccini P, Koralsztein JP, Billat V (2000). Is slow component of oxygen uptake associated with vastus lateralis de-oxygenation during treadmill running. In: 5th Annual Congress of the European College of Sport Science. p. 252, Jyväskylä, Finland, July 19-23
63. Quaresima V, **Ferrari M**, Oeseburg B, Colier WJNM (2000). Left lateral frontal oxygenation changes upon word generation and control tasks by functional near infrared spectroscopy. In: Fifth International Conference on Functional Brain Mapping of the Human Brain. Neuroimage, vol. 11, p. 306, San Antonio, Texas, USA, June 12-16
64. **Ferrari M**, Quaresima V, van Beekvelt MCP, van Engelen B, Colier WJNM (2000). Near-infrared spectroscopy and neuromuscular disorders: from single channel towards multi-channel optical topography. In: European Journal of Medical Research. Vol. 5, p. 12, Halle/Saale, Germany, March 31 - April 2
65. Grassi B, Rampichini S, Marconi C, Quaresima V, **Ferrari M**, Cerretelli P. (2000). On-kinetics of muscle oxygenation during constant-load cycling. In: Medicine and Science in Sports and Exercise. Vol. 32, p. 1204, ISSN: 0195-9131, Baltimore, Maryland, USA, June 2-5
66. Caulo M, Quaresima V, Grillotti L, Zeppillo D, **Ferrari M**, Masciocchi C, Gallucci M. (2000) Valutazione dell'ossigenazione cerebrale in corso di cateterismi carotidei selettivi e super-selettivi mediante ossimetria tissutale a fibre ottiche. XVII Congresso AINR, Genova 14-17 dicembre. In: Rivista di Neuroradiologia 13 (Suppl 3), abs. P44, p. 100-101
- 1999**
67. Totaro R, Quaresima V, Sacco S, Spartera C, **Ferrari M**, Carolei A (1999). Assessment of frontal and lateral CO₂ reactivity by near infrared spatially resolved spectroscopy. In: Cerebrovascular Diseases. Vol. 9, p. 13, ISSN: 1015-9770, Venice, Italy, April 10-13
68. Quaresima V, Totaro R, Sacco S, Carolei A, **Ferrari M** (1999). Cerebral cortex oxyhaemoglobin saturation measured by a spatially resolved near infrared photometer (Niro-300). In: Cerebrovascular Diseases. Cerebrovascular Diseases. Vol. 9, p. 43, ISSN: 1015-9770, Venice, Italy, April 10-13
69. Totaro R, Barattelli G, Quaresima V, Carolei A, **Ferrari M**. (1999) Assessment of cerebrovascular reactivity by TCD in combination with near-infrared spectroscopy. XV Congresso nazionale di Neurosonologia, L'Aquila, 1-3 ottobre. In: Cerebrovascular Diseases 1999, vol. 9(1), p. 60
70. Quaresima V, Homma S, Azuma K, Shimuzu S, **Ferrari M**, Kagaya A (1999). Muscle oxygenation and femoral artery flow during dynamic plantar flexion exercise. In: Medicine and Science in Sports and Exercise. Vol. 31, p. 246, ISSN: 0195-9131, Seattle, Washington, USA, June 2-5
71. Quaresima V, Sacco S, Totaro R, **Ferrari M** (1999). Non-invasive measurement of cerebral oxyhaemoglobin saturation by two near infrared spectroscopy methods. In: Clinical Chemistry and Laboratory Medicine. Vol. 37, p. 30, ISSN: 1434-6621, Florence Italy, June 6-11
72. **Ferrari M**, Quaresima V (1999). Outstanding role of NIRS in clinical medicine. (*Invited Speaker*). In: 9th International Conference on Near-Infrared Spectroscopy Towards the Third Millennium NIR-99. p. 0.6-1, Verona, Italy, June 13-18

73. Totaro R, Quaresima V, Sacco S, Komiya T, Ventura M, Spartera C, **Ferrari M**, Carolei A. (1999) Assessment of cerebrovascular CO₂ reactivity by near infrared spectroscopy. In: The Italian Journal of Neurological Sciences 4(20) abs. N.8, p. S152.
- 1998**
74. Quaresima V, Grassi B, Marconi C, **Ferrari M**, Cerretelli P. (1998). Blood lactate accumulation is associated with accelerated muscle deoxygenation. In: Medicine and Science in Sports and Exercise. Vol. 30, p. 67, ISSN: 0195-9131, Orlando, Florida, USA, June 3-6
75. Colier WNJM, **Quaresima V**, Barattelli G, Cavallari P, Oeseburg B, Ferrari M (1998). Cerebral hemoglobin oxygenation in response to motor cortical activation revealed by a fast spectrophotometer. In: III International Congress of Pathophysiology. Pathophysiology, vol. 5, p. 251, Lahti, Finland, June 28-July 3
76. Wenzel, R, Quaresima, V, **Ferrari, M**, Oeseburg, B, Villringer, A., Colier WNJM (1998). Cortical blood oxygenation changes in the left and right occipital area induced by selective visual stimuli in humans. In: International Society on Oxygen Transport to Tissue, 26th ISOTT Conference. p. 62, Budapest, Hungary, August 23-28
77. Quaresima V, Homma S, Azuma K, Shimizu S, **Ferrari M**, Kagaya A (1998). Oxygenation patterns in the calf muscle groups during dynamic plantar flexion exercise. In: International Society on Oxygen Transport to Tissue, 26th ISOTT Conference. p. 51, Budapest, Hungary, August 23-28
78. **Ferrari M**, Quaresima V (1998). The role of near infrared spectroscopy in the evaluation of muscle diseases. (*Invited Speaker*). In: 1st International Symposium on Medical Near Infrared Spectroscopy. p. 32-33, Tokyo, Japan, September 18
79. Totaro R, Barattelli G, Quaresima V, Carolei A, **Ferrari M** (1998) Assessment of cerebrovascular reactivity by TCD in combination with near-infrared spectroscopy. XV Congresso Nazionale di Neurosonologia, L'Aquila, 1-3 ottobre. In: Cerebrovascular Diseases 9 p. 60
- 1997**
80. Colier WNJM, Quaresima V, Barattelli G, Cavallari P, **Ferrari M** (1997) Detailed evidence of cerebral haemoglobin oxygenation in response to motor cortical activation revealed by a continuous wave spectrometer with 10 Hz temporal resolution. Biomedical Optics 1997 Symposium, Conference: "Optical tomography and Spectroscopy of Tissue: Theory, Instrumentation, Model and Human Studies II", San José, California, USA, abs. 2979-55, p. 137, 9-12 February
81. Franceschini MA, Fantini S, Gratton E, Quaresima V, **Ferrari M** (1997). Difference in leg muscles oxygenation during treadmill exercise by a new-infrared frequency domain oximeter. In: BiOS Europe '97 The European Biomedical Optics Week. Conference on: "Photon Propagation in Tissue III". p. 48, San Remo, Italy, September 4-8
82. Quaresima V, Tomasi A, **Ferrari M** (1997). Effect of glutathione on the "in vivo" reduction of a nitroxide free radical by electron spin resonance spectroscopy. In: Society for Free Radical Research, Europe. 1997 Summer meeting. p. 190, Abano, Padova, Italy, June 26-28
83. Springett R, Quaresima V, Cooper C, Cope M, **Ferrari M**, Delpy D (1997). Hypercapnia and reactive-hyperaemia oxidise cytochrome oxidase in the piglet brain. In: XVIII International Symposium on Cerebral Blood Flow and Metabolism. In: Journal of Cerebral Blood Flow and Metabolism, vol. 17, p. 558, ISSN: 0271-678X, Baltimore, Maryland, USA, June 15-19
84. **Ferrari M**, Quaresima V (1997). Imaging diagnostic techniques using near infrared light. (*Invited speaker*). In: 7th Congress of the European Society for Photobiology. p. 8, Stresa, Italy, September 8-13
85. Grassi B, Marconi C, **Ferrari M**, Quaresima, V (1997). Is blood lactate increase at submaximal oxygen consumption associated with muscle anaerobiosis? In: BiOS Europe '97 The European Biomedical Optics Week. p. 59, San Remo, Italy, September 4-8
86. Quaresima V, Franceschini MA, Fantini S, Gratton E, **Ferrari M** (1997) Difference in leg muscles oxygenation during treadmill exercise by a new-infrared frequency domain oximeter. BiOS Europe '97 The European Biomedical Optics Week. Conference on: "Photon Propagation in Tissue III", San Remo, Italy, abs. 3194-16, p. 48, 4-8 September
87. Matcher SJ, Quaresima V, **Ferrari M** (1997) Quantitation methods for determining the intrinsic composition of breast tissue in vivo using near-infrared transillumination. BiOS Europe '97 The European Biomedical Optics Week. Conference on: "Photon Propagation in Tissue III", San Remo, Italy, abs. 3194-29, p. 50, 4-8 September
88. Colier WNJM, Quaresima V, Barattelli G, van der Sluijs M, Oeseburg B, **Ferrari M** (1997). Motor cortex studies with a highly sensitive near infrared spectrometer. In: Third International Conference on Functional Brain Mapping of the Human Brain. In: Neuroimage, vol. 5, p. 235, ISSN: 1053-8119, Copenhagen, Denmark, May 19-23
89. Totaro R, Barattelli G, Quaresima V, Marini C, **Ferrari M**, Carolei A (1997). Near-infrared spectroscopy in the assessment of CO₂ reactivity. In: Cerebrovascular Diseases. Vol. 7, p. 311, Florence, Italy, October 4
90. **Ferrari M**, Matcher S, Quaresima V (1997). Potential role of near-infrared spectroscopy for breast cancer detection. In: 36th Annual Eastern Analytical Symposium. p. 122, Somerset, NJ, USA, November 16-21
91. Totaro R, Ferrari M, Barattelli G, Quaresima V, Marini C, Carolei A (1997) Reproducibility of near-infrared spectroscopy in cerebrovascular reactivity studies. XXX National Congress of the Italian Neurological Society, Palermo, 28 October-1 November. In: The Italian Journal of Neurological Sciences supplement 4, p. 139
- 1996**
92. **Ferrari M**, Barattelli G, Quaresima V (1996). Background and limitations of near infrared spectroscopy. In: Symposium on neonatal cerebral oxygenation and hemodynamics. p. 7-10, Nijmegen, The Netherlands, April 19
93. Binzoni T, Quaresima V, Hiltbrand E, Gürke L, Cerretelli P, **Ferrari M** (1996). Influence of repeated ischaemia/reperfusion cycles (ischaemic preconditioning) on human calf energy metabolism by simultaneous near infrared spectroscopy and 31P-NMR measurements. In: International Society on Oxygen Transport to Tissue, 24th ISOTT Conference. p. 4.4, Dundee, Scotland, UK, August 19-23
94. Quaresima V, Sfäreni R, Pizzi A, **Ferrari M** (1996). Measurement of the muscle optical properties on muscular dystrophy patients by a frequency-domain photometer. In: Biomedical Optical Spectroscopy and Diagnostics, 1996 Technical Digest (Optical Society of America). p. 60-62, Orlando, Florida, March 20-22
95. De Blasi RA, **Ferrari M**, Almanrader N (1996). Muscle near infrared spectroscopy for critically ill patients management. In: Biomedical Optical Spectroscopy and Diagnostics, 1996 Technical Digest (Optical Society of America). p. 65-66, Orlando, Florida, USA, March 20-22
96. Sfäreni R, Matcher SJ, Hall JW, **Ferrari M**, Quaresima, V (1996). Optical mapping of the human breast using second derivative near infrared spectroscopy. In: Biomedical Optical Spectroscopy and Diagnostics, 1996 Technical Digest (Optical Society of America). p. 63-64, Orlando, Florida, USA, March 20-22
97. Quaresima V, Pizzi A, Sfäreni R, Ferrari A, **Ferrari M** (1996). Tissue oxygenation in muscular dystrophy patients by near infrared spectroscopy. In: Symposium on recent advances in diagnosis and therapy of neuromuscular diseases. Neuromuscular Disorders, vol. 6, p. 29, ISSN: 0960-8966, Prato, Italy, March 21-24
98. **Ferrari M**, Quaresima V (1996) The role of near infrared spectroscopy for non invasive tissue metabolic monitoring. (*Relazione su invito*). 41° Congresso Nazionale Società Italiana di Biochimica, abs. TR2, p.64, Catania, 18-21 settembre
99. Totaro R, **Ferrari M**, Barattelli G, Quaresima V, Colier WNJM, Carolei A (1996) Valutazione della reattività cerebrovascolare mediante Doppler transcranico e spettroscopia nel vicino infrarosso. XIII Congresso Nazionale della Società Italiana di Neurosonologia, abs.68, Torino, 18-19 ottobre

1995

100. **Ferrari M**, Barbieri B, De Blasi RA, Fantini S, Franceschini MA, Quaresima V, Gratton E (1995). Cerebral and muscle hemoglobin content and oxygenation measurements by a two wavelength frequency-domain near-infrared photometer. In: 3rd European Conference on Engineering and Medicine. p. 64, Florence, Italy, 30 Aprile-3 May
101. Fantini S, Franceschini Ma, Barbieri B, Quaresima, V, **Ferrari M**, Gratton E., De Blasi RA (1995). Cerebral and muscle oxygen saturation measurement by a frequency-domain near-infrared spectroscopic technique. In: Biomedical Optics 1995 Symposium, Conference 2387: Advances in Laser and Light Spectroscopy to Diagnose Cancer and Other Diseases II. p. 29, San José, California, USA, February 4-10
102. Quaresima V, Tsumishima K, **Ferrari M**, Utsumi H (1995). Experimental animal models for the "in vivo" liver NO detection by EPR. In: II International Workshop on "in vivo" ESR and ESR imaging. p. 73, L'Aquila, Italy, September 10-14
103. **Ferrari M**, Sfäreni R, Barattelli G, Quaresima V (1995). From continuous wave to frequency-domain near infrared spectroscopy for absolute quantification of the chromophora. (*Invited Speaker*). In: Ross Special Conference Hot Topics '95 in Neonatology. p. 52-64, Washington, DC, USA, December 3-5
104. **Ferrari M**, Sfäreni R, De Blasi RA, Quaresima V (1995). From continuous wave to frequency-domain near infrared spectroscopy for absolute quantification of the chromophora. In: 5th International Conference on Fetal & Neonatal Physiological Measurement. p. 89, Keele, Staffordshire, UK, September 2-5
105. Pizzi A, Quaresima V, Ferrari A, **Ferrari M** (1995). Muscle oxygenation monitoring on muscular dystrophy patients by non invasive near infrared spectroscopy. In: 3rd European Conference on Engineering and Medicine. p. 87, Florence, Italy, April 30 – May 3
106. **Ferrari M**, Quaresima V, Sotgiu A (1995). Present status of electron paramagnetic resonance (EPR) spectroscopy/imaging for free radical detection. In: Life Sciences 1995, International Conference. Pflügers Archiv, vol. 431, p. 175, Gozd Martuljek, Slovenia, September 23-28
107. Quaresima, V, De Blasi RA, Ferrari A, **Ferrari M**, Pizzi A (1995). Quadriceps oxygenation changes during walking and running. In: Biomedical Optics 1995 Symposium, Conference 2387: Advances in Laser and Light Spectroscopy to Diagnose Cancer and Other Diseases II. p. 28, San José, California, USA, February, 4-10
108. Ursini CL, Quaresima V, Placidi G, Sotgiu A, **Ferrari M** (1995). Role of the instrumental parameters on the nitroxyl living rat images obtained by low frequency EPR. In: II International Workshop on "in vivo" ESR and ESR imaging. p. 21, L'Aquila, Italy, September 10-14
109. Hall JW, **Ferrari M**, Quaresima V, Sfäreni R (1995). Understanding the near-infrared characteristics of the human breast. In: 7th International Conference on Near-Infrared Spectroscopy. p. 42-43, Montreal, Canada, August 6-11

1994

110. Quaresima V, **Ferrari M**, De Blasi R, Ferrari A, Pizzi A (1994). Can NIRS be useful for muscular dystrophy patients evaluation? In: Proceedings of EC Concerted Action on NIRS & Imaging of Biological Tissue, 2nd Plenary Meeting. p. 53, Bonn, Germany, May 26-29
111. **Ferrari M**, Quaresima V, De Blasi R (1994). Optimization of optrode positioning by a low-temperature thermoplastic material. In: Proceedings of EC Concerted Action on NIRS & Imaging of Biological Tissue, 2nd Plenary Meeting. p. 20, Bonn, Germany, May 26-29
112. Quaresima V, Pizzi A, De Blasi RA, Ferrari A, **Ferrari M** (1994). Influence of the treadmill speed/slope on quadriceps oxygenation during dynamic exercise. In: International Society on Oxygen Transport to Tissue, 22nd ISOTT Conference. Istanbul, Turkey, August 22-26
113. De Blasi RA, Sfäreni R, Pietranico B, Mega AM, **Ferrari M** (1994). Non invasive measurement of brachioradial muscle VO₂-blood flow relationship during graded isometric exercise. In: International Society on Oxygen Transport to Tissue, 22nd ISOTT Conference. Istanbul, Turkey, August 22-26
114. Sotgiu A, Alecci M, **Ferrari M**, Quaresima V (1994) Low frequency EPR spectroscopy/imaging: new experimental modalities and in-vivo applications. International Conference on Bioradicals Detected by ESR Spectroscopy, abs. I21, Yamagata, Japan, June 12-16
115. Sotgiu A, Alecci M, **Ferrari M**, Quaresima V, Ursini CL (1994) Regional nitroxide free radical imaging by low frequency (280 MHz) EPR spectroscopy in whole rat. 36th Rocky Mountain Conference on Analytical Chemistry, Denver, Colorado, USA, abs. 201, pag. 129, July 31-August 5
116. Ursini CL, Quaresima V, Placidi G, Alecci M, Sotgiu A, **Ferrari M** (1994) Continuous wave 280 MHz "in vivo" EPR imaging: limits in rat organs identification. XVIth International Conference on Magnetic Resonance in Biological Systems, p. 46, Veldhoven, The Netherlands, August 14-19
117. Sotgiu A, Alecci M, **Ferrari M**, Placidi G, Quaresima V, Ursini CL (1994) Sequential two dimensional images of a nitroxide free radical in whole rat by low frequency (280 MHz) EPR. European ESR Meeting on Recent Advances and Applications to Organic and Biorganic Materials, p. 12, Paris, France, 5-9 September

1993

118. De Blasi RA, **Ferrari M**, Conti G, Mega AM, Gasparetto A. (1993). Forearm blood flow measurement by near infrared spectroscopy. In: 21st Meeting of the International Society on Oxygen Transport to Tissue. Abs. 76, San Diego, California, USA, August 14-18
119. **Ferrari M**, De Blasi RA, Zaccanti G (1993). From clinical near infrared monitoring to near infrared imaging: some considerations from phantoms and in vivo time resolved measurements. In: Biomedical Optics Europe '93 Symposium, Conference 2082: Quantification and localization using diffused photon in a highly scattering media. vol. abs. 25, p. 58, Budapest, Hungary, September 1-5
120. Sotgiu A, Alecci M, Quaresima V, Ursini CL, **Ferrari M**, Passariello R (1993). Functional mapping of nitroxide free radical by two-dimensional electron paramagnetic resonance imaging. In: The European Society for Magnetic Resonance in Medicine and Biology. 10th Annual Scientific Meeting and Exhibition. p. 268, Rome, Italy, June 3-6
121. **Ferrari M**, Quaresima V, Ursini CL (1993). Fundamentals of perinatal near infrared spectroscopy. (*Invited Speaker*). In: 2nd World Congress of Perinatal Medicine. p. 21-22, Rome, Italy, September 19-24
122. Zaccanti G, Brusciaglioni P, Martinelli F, Gurioli M, Salimbeni R, **Ferrari M** (1993). Imaging of biological tissues by means of a time gated confocal scanning: experimental and numerical results. In: Biomedical Optics 1993 Symposium, Conference 1888: Photon Migration and Imaging in Random Media and Tissues. p. 122 abs. 08, Los Angeles, California, USA, January 17-19
123. **Ferrari M**, Wei Q, De Blasi RA, Quaresima V, Zaccanti G. (1993). Variability of human brain and muscle optical pathlength in different experimental conditions. In: Biomedical Optics 1993 Symposium, Conference 1888: Photon Migration and Imaging in Random Media and Tissues. p. 132, Los Angeles, California, USA, January 17-19
124. Colacicchi S, Alecci M, Gualtieri G, Quaresima V, Ursini CL, **Ferrari M**, Sotgiu A (1993) "In vivo" L-band and low frequency EPR spectroscopy/imaging. ESR spectroscopy in Chemistry, Physics and Biology, Silver Jubilee Meeting of the ESR group, abs. SP-2 p.12, Sheffield, UK, 29 March-2 April
125. Quaresima V, Ursini CL, **Ferrari M** (1993) In vivo very low frequency electron paramagnetic resonance (EPR) imaging: study of a nitroxyl oxygen-dependent reduction. 38^o Congresso Nazionale Società Italiana di Biochimica, abs. G9 p.197, Trieste, 7-10 settembre

126. **Ferrari M**, Quaresima V, Ursini CL, Alecci M, Sotgiu A (1993). In vivo electron paramagnetic resonance spectroscopy/ imaging of paramagnetic species. (*Invited Speaker*). In: 8th International Conference on Chemical Modifiers of Cancer Treatment. p. 12-13, Kyoto, Japan, June 16-19
127. Ursini CL, Alecci M, Quaresima V, Sotgiu A, **Ferrari M** (1993) Mapping bidimensionale di radicali nitrossidi nel ratto mediante risonanza paramagnetica elettronica a bassa frequenza. III Convegno Nazionale del Gruppo Italiano di Risonanza di Spin Elettronico, Abs. 68, Alghero, 24-27 settembre 1993
128. **Ferrari M**, De Blasi RA (1993). Quantitation of human muscle oxygenation by near-infrared time resolved and non-time resolved spectroscopy. In: Thirty-second annual Eastern Analytical Symposium. p. 65 abs. 185, Somerset, NJ, USA, November 15-19

1992

129. Alecci M, **Ferrari M**, Passariello R, Quaresima V, Sotgiu A, Ursini CL (1992). Electron paramagnetic resonance two-dimensional imaging of water soluble nitroxide free radical in whole rat. In: 11th Annual Scientific Meeting Society of Magnetic Resonance in Medicine. Berlin, Germany, August 8-14
130. De Blasi RA, Conti G, Mattia C, Mega AM, **Ferrari M**, Gasparetto A (1992). Non invasive evaluation of respiratory muscle oxygenation in mechanically ventilated patients by near infrared spectroscopy (NIRS). In: Intensive Care Medicine 18. p. 118 abs. P5, Barcelona, Spain, October 27-31
131. De Blasi RA, Alviggi I, Elwell C, Cope M, **Ferrari M** (1992). Non invasive measurement of forearm oxygen consumption during exercise by near infrared spectroscopy. In: 20th Meeting of the International Society on Oxygen Transport to Tissue. p. abs. 039, Mainz, Germany, August 26-30
132. Zaccanti G, Barilli M, Brusciaglioni P, Ismaelli A, Wei QN, **Ferrari M** (1992). Optical properties of "in vivo" human skeletal muscle from near infrared picosecond laser pulse. In: International Conference Photodynamic Therapy and Medical Laser Applications. p. 285 abs. 376, Milan, Italy, June 25-27
133. Zaccanti G, Barilli M, Brusciaglioni P, Carraresi L, Ismaelli A, Martinelli F, Wei QN, **Ferrari M** (1992) Indagini su tessuti biologici mediante la tecnica della "near infrared time resolved spectroscopy". II Convegno Nazionale "Strumentazione e metodi di misura elettroottici", pp. 447-450, Firenze 25-27 maggio
134. **Ferrari M**, Zaccanti G (1992) Spettroscopia dei tessuti nel vicino infrarosso risolta e non risolta nel tempo: principi, applicazioni cliniche, prospettive dell'imaging. Società Italiana di Fotobiologia, Castiglione della Pescaia, Livorno, 1-2 Giugno
135. Quaresima V, Alecci M, **Ferrari M**, Sotgiu A (1992) In vivo electron paramagnetic resonance imaging of a nitroxide free radical in whole rat. International Society for Free Radical Research, VI Biennial Meeting, Torino, June 16-20. In: Free Radical Research Communications 16 supplement 1, abs. 4.8
136. **Ferrari M**, Hanley DF, Williams M (1992) Oxygen dependence of "in vivo" cat brain cytochrome c oxidase copper band redox responses. 37^o Congresso Nazionale Società Italiana di Biochimica, abs. F2, p. 254, Perugia, 25-27 settembre
137. Alecci M, **Ferrari M**, Passariello R, Quaresima V, Sotgiu A, Ursini CL (1992) Localizzazione spaziale di radicali liberi nitrossidi "in vivo" mediante risonanza paramagnetica elettronica a bassa frequenza (280 MHz). Convegno Nazionale Risonanze Magnetiche, Grottaferrata, abs. C03, Roma, 21-23 ottobre
138. Ursini CL, Quaresima V, Gualtieri G, Sotgiu A, **Ferrari M** (1992) Monitoraggio del metabolismo di un radicale nitrossido nel sangue circolante di ratto mediante spettroscopia EPR. Convegno Nazionale Risonanze Magnetiche, Grottaferrata, abs. C26, Roma, 21-23 ottobre

1991

139. **Ferrari M**, Gualtieri G, Sotgiu A, Testa L (1991). EPR imaging of perfused heart: preliminary results on moving phantom. In: International Symposium on Recent Advances in ESR Spectroscopies Applications to Chemistry, Physics and Biology. p. 53 abs.17, Padova, Italy, September 8-12
140. Quaresima V, Alecci M, Sotgiu A, **Ferrari M** (1991). Whole rat nitroxide free radical pharmacokinetics by 280 MHz spectrometer. In: International Symposium on Recent Advances in ESR Spectroscopies. Applications to Chemistry, Physics and Biology. vol. abs 40, p. abs. 40, 76, Padova, Italy, September 8-12
141. **Ferrari M**, De Blasi RA, Brusciaglioni P, Carraresi L, Gurioli M, Quaglia E, Zaccanti G. (1991). Near IR time resolved spectroscopy and fast scanning spectrophotometry in ischemic human forearm. In: Optics, Electro-optics, & Laser Applications in Science & Engineering, Conference, Time Resolved Spectroscopy and Imaging of Tissues. p. abs. 1431-30, Los Angeles, California, USA, January 20-25
142. **Ferrari M**, Barilli M, De Blasi R, Wei QN, Zaccanti G (1991). Near infrared time resolved spectroscopy of human forearm: effects of muscle-bone components and fibers geometry on pulse shape and estimation of absorption and diffusion coefficients. In: International Symposium on Innovative Fluorescence Methodologies in Biochemistry and Medicine. p. 18, Villa Mondragone, Monteporzio Catone (Rome), September 23-26
143. De Blasi RA, Cope M, **Ferrari M** (1991). Oxygen consumption of human skeletal muscle by near infrared spectroscopy during tourniquet-induced ischemia in maximal voluntary contraction. In: 19th Meeting of the International Society on Oxygen Transport to Tissue. p. abs. K7, Curacao, Netherlands Antilles, August 24-30
144. Quaresima V, Alecci M, Sotgiu A, **Ferrari M** (1991) In vivo very low frequency EPR spectroscopy: pharmacokinetics of pyrrolidine nitroxide (PCA) free radical on whole rat. 36 Congresso Nazionale Società Italiana di Biochimica, p. 375, Ferrara, 10-12 settembre
145. **Ferrari M**, De Blasi R, Zaccanti G (1991) Human skeletal muscle oxygenation studied by near infrared time resolved spectroscopy. Incontro S.I.B. Lazio-Abruzzo-Molise, Interazioni Macromolecolari, Università Cattolica S. Cuore, Facoltà di Medicina e Chirurgia "A. Gemelli", 14 giugno 1991. In: Italian Journal of Biochemistry 41:128A-129A
146. Zaccanti G, Brusciaglioni P, Barilli M, **Ferrari M** (1991) Biological tissue investigation "in vivo" using time resolved spectroscopy. Associazione Italiana di Fisica Biomedica, VI Congresso Nazionale, Genova-Badia di S. Andrea 24-28 giugno. In: Physica Medica 8:48
147. **Ferrari M**, Zaccanti G, Barilli M, De Blasi R, Wei QN, Brusciaglioni P (1991) Impiego di laser al picosecondo per il monitoraggio non invasivo dell'ossigenazione cerebrale. Società Italiana di Laser Chirurgia e Medicina. IX Congresso Nazionale, p.95, Roma, 21-23 novembre
148. Zaccanti G, Barilli M, Brusciaglioni P, Carraresi L, Ismaelli A, Martinelli F, Wei QN, **Ferrari M** (1992) Indagini su tessuti biologici mediante la tecnica della "near infrared time resolved spectroscopy". II Convegno Nazionale "Strumentazione e metodi di misura elettroottici", pp. 447-450, Firenze, 25-27 maggio

1990

149. Hanley DF, **Ferrari M**, Williams M, Wilson DA, Traystman RJ (1990). Effect of decreased cerebral oxygen delivery on cortical evoked potentials and cytochrome oxidase (COx) redox state. In: 74th Annual Meeting of Federation of American Societies for Experimental Biology. THE FASEB JOURNAL, vol. 4, p. A409 abs. 825, ISSN: 0892-6638, Washington, DC, USA, April 1- 5
150. Quaglia E, De Blasi RA, **Ferrari M** (1990). Human forearm muscle oxygenation evaluation by near infrared fiber optic fast scanning spectrophotometry. In: Conference on Optic Techniques in Diagnostic and Therapeutic Medicine. p. abs. 20, Florence, Italy, March 26-27

151. Hanley DF, Cross K, Norris K, **Ferrari M**, Wilson DA, Traystman R (1990). Infrared prediction of human cerebral venous hemoglobin saturation. In: American Academy of Neurology 42nd Annual Meeting. Neurology, vol. 40, p. 180 - abs. 229S, ISSN: 0028-3878, Miami Beach, Florida, USA, April 30-May 6
152. Forte T, Soriani M, Menditto A, Minetti M., Quaresima V, **Ferrari, M** (1990). Iron induced oxidative damage in human blood plasma. In: XXXV Congresso Nazionale Società Italiana di Biochimica, Joint Symposia Italian Biochemical Society, Dutch Biochemical Society, Union of Biochemical Societies of Yugoslavia. Italian Biochemical Society Transactions, p. 203, Bari, Italy, September 29-October 3
153. Carta F, Conti M, **Ferrari M** (1990). Main frame software development for simultaneous multicomponent analysis in near infrared spectroscopy: application to complex biological suspensions. In: The 41st Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy. p. abs. 248, New York, USA, March 5-9
154. De Blasi RA, Quaglia E, Gasparetto A, Ferrari M (1990). Muscle oxygenation by fast near infrared spectrophotometry (NIRS) in ischemic forearm. In: 18th Meeting of the International Society on Oxygen Transport to Tissue. p. abs. 10, Townsville, Queensland, Australia, July 19-22
155. Norris K, Williams M, **Ferrari M**, Wilson DA, Traystman RJ, Hanley DF (1990). NIR model of "in vivo" spectroscopy of intact feline brain. In: Third International Conference on Near Infrared Spectroscopy. p. S5 3, Brussels, Belgium, June 25-29
156. Ferrari M, Cross K, Norris K, Wilson DA, Traystman RJ, Hanley DF (1990). Prediction of canine cerebral venous hemoglobin saturation. In: Third International Conference on Near Infrared Spectroscopy. p. S5 2, Brussels, Belgium, June 25-29
157. Hanley DF, Cross K, Norris K, **Ferrari M**, Wilson DA, Traystman RJ (1990). Non invasive prediction of cerebral venous hemoglobin saturation. In: 15th International Joint Conference on Stroke and Cerebral Circulation. p. 167 abs.41, Orlando, Florida, USA, February 15-17
158. Colacicchi S, **Ferrari M**, Gualtieri G, Santini MT, Sotgiu A (1990). Pharmacokinetics and spatial localization of EPR signals in mice. In: Ninth Annual Meeting Society of Magnetic Resonance in Medicine. p. 620, New York, USA, August 18-24
159. Forte T, Quaresima V, Soriani M, Menditto A, **Ferrari M**, Minetti M (1990) Iron induced oxidative damage in human blood plasma. XXXV Congresso Nazionale Società Italiana di Biochimica, Joint Symposia Italian Biochemical Society, Dutch Biochemical Society, Union of Biochemical Societies of Yugoslavia, Bari, 29 settembre 3 ottobre, In: Italian Biochemical Society Transactions 1, p. 203
160. Gallo P, Colacicchi S, **Ferrari M**, Gualtieri G, Sotgiu A (1990) Electron paramagnetic resonance spectroscopy (EPR) on isolated rat heart: preliminary experiments. I Workshop dell'Associazione "Scienze Cardiovascolari" Heart rate and cardiovascular function", C23, Castel Ivano, Trento, 1-2 ottobre
161. Colacicchi S, **Ferrari M**, Gallo P, Gualtieri G, Sotgiu A (1990) Spettroscopia EPR su cuore isolato perfuso. Congresso Nazionale di Risonanze Magnetiche, p.5-17, Pisa, 22-24 ottobre
- 1989**
162. **Ferrari M**, Hanley DF, Wilson DA, Traystman RJ (1989). Cerebral cytochrome c oxidase copper band quantification in perfluorocarbon exchange transfused cats. In: 17th Meeting of the International Society on Oxygen Transport to Tissue. p. abs. 17E, Gottingen, West Germany, July 21-24
163. **Ferrari M**, Forte T, Quaresima V, Soriani M, Minetti M (1989). Human blood ascorbic acid free radical responsiveness to hypoxia and oxidative stress. In: 19th Meeting of the Federation of European Biochemical Societies. p. abs. M203, Rome, Italy, July 2-7
164. **Ferrari M**, Hanley DF, Wilson DA, Traystman RJ (1989). Identification of redox changes in cat cerebral cytochrome c oxidase. In: 73rd Annual Meeting of Federation of American Societies for Experimental Biology. THE FASEB JOURNAL, vol. 3, p. A1166-abs. 5456, ISSN: 0892-6638, New Orleans, Louisiana, USA, March 19-23
165. **Ferrari M**, Hanley DF, Traystman RJ, Wilson DA (1989). Near infrared brain sensor devices. In: II World Symposium Computers in the Care of the Mother, Fetus and Newborn. Journal of Perinatal Medicine, vol. 17, p. 35-suppl. 1, ISSN: 0300-5577, Kyoto, Japan, October 23-26
- 1988**
166. Wilson DA, **Ferrari M**, Hartman JF, Traystman RJ (1988). A metabolic model of cerebral autoregulation. In: 72nd Annual Meeting of Federation of American Societies for Experimental Biology. The FASEB Journal, vol. 2, p. A1520, ISSN: 0892-6638, Las Vegas, Nevada, USA, May 1- 6
167. **Ferrari M**, Wilson DA, Hanley DF, Hartman JF, Traystman RJ (1988). Determination of venous cerebral hemoglobin saturation by derivative near infrared spectroscopy. In: 16th Meeting of the International Society on Oxygen Transport to Tissues. Ottawa, Canada, August 8-11
168. **Ferrari M**, Wilson DA, Hanley DF, Traystman RJ (1988). Near infrared determined cerebral transit time and oxy deoxy hemoglobin relationships during hemorrhagic hypotension in the dog. In: 16th Meeting of the International Society on Oxygen Transport to Tissues. Ottawa, Canada, August 8-11
169. **Ferrari M**, Hanley DF, Wilson DA (1988). Near infrared spectroscopy in the assessment of the newborn brain. (*Invited Speaker*). In: XI European Congress of Perinatal Medicine. p. 32, Rome, Italy, April 10-13
170. **Ferrari M**, Hartmann JF, Hanley DF, Wilson DA, Traystman RJ (1988). Non invasive determination of cerebral venous hemoglobin saturation in the dog by near infrared spectroscopy. In: 72nd Annual Meeting of Federation of American Societies for Experimental Biology. The FASEB Journal, vol. 2, p. A508, ISSN: 0892-6638, Las Vegas, Nevada, USA, May 1- 6
171. Hanley DF, **Ferrari M**, Hartmann JF, Wilson DA, Traystman RJ (1988). Non invasive determination of cerebral venous hemoglobin saturation in the dog by near infrared spectroscopy. In: 113th Annual Meeting of the Association of the American Neurological Association. Annals of Neurology, vol. 24, p. 130-131, ISSN: 0364-5134, Philadelphia, USA, October 2-5
- 1987**
172. **Ferrari M**, Wilson DA, Hanley DF, Traystman RJ (1987). Cerebral blood volume/flow/transit time relationships during hemorrhagic hypotension in the dog. In: 71st Annual Meeting of the Federation of American Societies for Experimental Biology. Federation Proceedings, vol. 46, p. 800, ISSN: 0014-9446, Washington, DC, USA, March 29 April 2
173. Wilson DA, **Ferrari M**, Hanley DF, Rogers MC, Traystman RJ (1987). Cerebral blood volume/flow/transit time relationships during hemorrhagic hypotension in the dog. In: Society of Critical Care Medicine Sixteenth Annual Educational and Scientific Symposium. Critical Care Medicine, vol. 15, p. 432, ISSN: 0090-3493, Anaheim, California, USA, May 26-29
174. **Ferrari M**, Wilson DA, Hartmann JF, Rogers MC, Traystman RJ (1987). Effects of graded hemorrhagic hypotension on cerebral blood flow, volume and mean transit time in the dog. In: 1987 Annual Meeting of the American Society of Anesthesiology. Anaesthesiology, vol. 67, p. A85, Atlanta, USA, October 10-14
175. **Ferrari M**, Hartmann JF, Wilson DA, Hanley DF, Traystman RJ (1987). Non invasive determination of cerebral venous hemoglobin saturation in the dog by derivative near infrared spectroscopy. In: 17th Annual Meeting Society for Neuroscience. Abstracts - Society for Neuroscience, vol. 13, p. 811, ISSN: 0190-5295, New Orleans, USA, November 16-21
176. Caiazza S, Fanizza C, **Ferrari M** (1987). Ultrastructural aspects and clinical implications of PFC non phagocytic cell interactions. In: 3rd International Symposium on Blood Substitutes. In: Biomaterials, Artificial Cells, and Artificial Organs, vol. 15, p. 404, ISSN: 0890-5533, Montreal, Canada, May 26-28
- 1986**

177. Zanette E, **Ferrari M**, Buttinelli C, Pace A, Pietraforte D, Sideri G, Carpi A, Fieschi C, Giannini I (1986). Correlation between TCD, near infrared spectroscopy, and EEG during carotid compression test. In: I International Conference on Transcranial Doppler Sonography. Rome, Italy, November 6-8
178. Caiazza S, Fanizza C, **Ferrari M** (1986). Fluorocarbone comme substituts artificiels de sang: une etude au microscope electronique. In: Atti del Colloque sur "Le globule rouge et autres transporteurs d'oxygene". p. 153, Affiche, Lyon, France, April 17-18
179. Carta F, **Ferrari M**, Giannini I (1986). Inside a quantitative analysis of "in vivo" near infrared monitoring. In: 14th Meeting of the International Society on Oxygen Transport to Tissue. p. abs. 58, Cambridge, UK, July 27-30
180. **Ferrari M**, De Marchis C, Di Nicola A, Agostino R, Nodari S, Bucci G (1986). Non invasive brain monitoring by near infrared spectroscopy: validation studies on newborn. In: Ross Laboratories Special Conference. Three More Topics in Neonatology. p. 185-186, Washington, DC, USA, December 7-9
181. Caiazza S, Fanizza C, **Ferrari M** (1986). Possible role of perfluorochemical particles as drug delivery agents in liver. In: European Congress on Biomaterials. p. abs. 295, Bologna, Italy, September 14-17
182. De Simone C, **Ferrari M**, Ferrarelli G, Rumi C, Pugnalone L, Sorice F (1986). The effects of substance P on human eosinophil receptors and function. In: II International Workshop on Neuroimmunomodulation. p. 139, Dubrovnik, Yugoslavia, June 1-6
- 1985**
183. **Ferrari M** (1985). Cerebral blood volume and cerebral blood flow. In: Joint Meeting on Ageing and Degenerative Processes: experimental and clinical models. p. abs. 18, Rome, Italy, March 11-12
184. **Ferrari M**, De Marchis C, Giannini I, Di Nicola A, Agostino R, Nodari S, Bucci G (1985). Cerebral blood volume and hemoglobin oxygen saturation monitoring in neonatal brain by near infrared spectroscopy. In: 13rd Meeting of the International Society on Oxygen Transport to Tissue. p. abs. 30, Raleigh, North Carolina, USA, July 28-31
185. **Ferrari M**, Zanette E, Giannini I, Bollea A, Fieschi C, Carpi A (1985). Effects of carotid artery compression test on regional cerebral blood volume, hemoglobin oxygen saturation and cytochrome c oxidase redox level in cerebrovascular patients. In: 13rd Meeting of the International Society on Oxygen Transport to Tissue. p. abs. 31, Raleigh, North Carolina, USA, July 28-31
186. Giannini I, **Ferrari M**, De Marchis C, Di Nicola A, Palermo D, Bucci G (1985). Neonatal brain monitoring by near infrared spectroscopy. In: XIV International Conference on Medical and Biological Engineering. vol. 23, p. 470-471, Helsinki, Finland, August 11-16
187. Carpi A, **Ferrari M**, Fieschi C, Giannini I, Sideri G, Zanette E (1985). Optical monitoring of brain blood supply during acute carotid artery occlusion: a proposal. In: Acute Brain Ischemia 1985. p. abs. 144, Siena, Italy, September 11-14
188. De Marchis C, De Merulis A, Di Nicola A, **Ferrari M**, Agostino R, Nodari S, Palermo D, Bucci G (1985) Monitoraggio del volume ematico cerebrale e dell'HbO₂ nel cervello del neonato mediante la spettroscopia nel vicino infrarosso. III Giornata di Ricerca in Pediatria, abs. 76, Brescia, 28-29 marzo
189. Caiazza S, Fanizza C, **Ferrari M** (1985) Aspetti ultrastrutturali della biocompatibilità di sostituti artificiali del sangue. Atti del XV Congresso Nazionale di Microscopia Elettronica, abs. 41, Roma, 28-31 maggio
190. **Ferrari M**, Giannini I, Allocca F, Carpi A, Fasella P (1985) Monitoraggio non invasivo del contenuto e del livello di ossigenazione dell'emoglobina e dello stato redox del Cua del Cyt a₃ cerebrali mediante spettroscopia nel vicino infrarosso. XXXI Congresso Nazionale della Società Italiana di Biochimica, abs. I25, p. 335, Rimini, 15-18 settembre
191. Carta F, Antonucci P, Pietraforte D, **Ferrari M** (1985) Sistema on line per acquisizione di dati di spettrofotometria in vivo. XXXI Congresso Nazionale della Società Italiana di Biochimica, abs. I26 p. 336, Rimini, 15-18 settembre
- 1984**
192. De Simone C, **Ferrari M** (1984). B Lymphocyte surface bound ICs stimulate PMNs to produce oxygen derivatives which impair T cell responses. In: Third International Symposium on Analytical Applications of Bioluminescence and Chemiluminescence. p. abs. 92, Birmingham, UK, April 17-19
193. **Ferrari M**, Giannini I, Sideri G, Zanette E. (1984). Continuous non invasive monitoring of human brain by near I.R. spectroscopy. In: XII Meeting of the International Society on Oxygen Transport to Tissue. p. abs. 33, Nijmegen, The Netherlands, August 26-30
- 1983**
194. Caiazza S, **Ferrari M**, Notargiacomo S (1983). Aspects ultrastructuraux des particules de fluorocarbone (PFC) dans les organes de rat 24 48 heures infusion de Fluosol 43. In: Troisiemes journees mediterraneennes de transfusion sanguine. p. 69-70, Nice, France, April 28-30
195. Giannini I, Carta F, **Ferrari M** (1983). Non invasive brain monitoring in near I.R.: a first analysis of human physiological data. In: 2nd International Conference on Applications of Physics to Medicine and Biology. p. abs. 13, Trieste, Italy, November 7-11
- 1982**
196. De Simone C, **Ferrari M**, Campanelli A, Chiavarelli M, Lucci L (1982). Influence of PGE₂, PGI₂, U46619 on T cell colony formation. In: V International Conference on Prostaglandins. p. abs. 639, Florence, Italy, May 18-21
197. Caiazza S, **Ferrari M**, Notargiacomo S (1982). Toxicity versus size relationships of PFC particles (perfluorocarbons) in artificial blood substitutes: an E.M. approach. In: International Symposium on Polymers in Medicine. Biomedical and Pharmacological Applications. p. abs. 56, Porto Cervo, Italy, May 24-28
198. Giannini I, **Ferrari M**, Carta F, Carpi A (1982). Fast pulsed heated thermistors as probes of local blood flow. In: Proceedings of the World Congress on Medical Physics and Biomedical Engineering 1982. p. abs. 7.21, Hamburg, Germany, September 5-11
199. **Ferrari M**, Giannini I, Carpi A, Fasella P (1982). Near I.R. spectroscopy in non invasive monitoring of cerebral function. In: Proceedings of the World Congress on Medical Physics and Biomedical Engineering 1982. p. abs. 22.17, Hamburg, Germany, September 5-11
- 1981**
200. De Simone C, **Ferrari M**, Meli D, Ricca D, Rumi C, Sorice F (1981) Isoenzimi della LDH nei granulociti eosinofili. VI Congresso Nazionale della Società Italiana di Immunologia e di Immunopatologia, abs. 30, Roma, 8-10 ottobre
201. **Ferrari M**, Giannini I, Carta F, Colilli R, Argiolas L, Carpi A, Fasella P (1981) Misure del flusso ematico locale nei tessuti con termistori riscaldati da impulsi brevi. V Riunione della Società Italiana di Biofisica Pura e Applicata, pp. 169-171, Perugia, 12-14 ottobre
202. Giannini I, **Ferrari M**, Carpi A, Fasella P (1981) La spettroscopia I.R. nel monitoraggio non invasivo della funzione cerebrale. V Riunione della Società Italiana di Biofisica Pura e Applicata, pp. 164-166, Perugia, 12-14 ottobre,
203. **Ferrari M**, Giannini I, Carta F, Colilli R, Argiolas L, Carpi A, Fasella P (1981) Misure del flusso ematico locale nei tessuti con termistori riscaldati da impulsi brevi. Atti della V Riunione della Società Italiana di Biofisica Pura e Applicata. A cura di F. Rustichelli, Università di Ancona, pp. 191-193.
204. Giannini I, **Ferrari M**, Carpi A, Fasella P (1981) La spettroscopia I.R. nel monitoraggio non invasivo della funzione cerebrale. Atti della V Riunione della Società Italiana di Biofisica Pura e Applicata. A cura di F. Rustichelli, Università di Ancona, pp. 185-187
- 1980**
205. **Ferrari M**, Giannini I, Carpi A, Fasella P, Fieschi C, Zanette E (1980). Non invasive infrared monitoring of tissue oxygenation and circulatory parameters. In: XII World Congress of Angiology. p. abs. 663, Athens, Greece, September 7-12

206. **Ferrari M**, Cannella C, Salerno C, Giacomello A (1980) Eterogeneità dell'ipoxantina guanina fosforibosil transferasi da globuli rossi umani. XXV Congresso Nazionale della Società Italiana di Reumatologia, abs. 92, Montecatini Terme, 24-26 ottobre

1977

207. **Ferrari M**, Giacomello A, Salerno C (1977) Dosaggio spettrofotometrico della fosforibosilpirofosfato sintetasi. Convegno sulla Ricerca Reumatologica in Italia, pp. 24-26, Roma, 10-11 dicembre

1976

208. **Ferrari M**, Giacomello A, Salerno C (1976) Regolazione della reazione di IMP pirofosforolisi catalizzata dalla ipoxantina guanina fosforibosiltransferasi. XIII Convegno Nazionale della Società di Biofisica e di Biologia Molecolare, abs. 25, Albano Laziale, 12-14 ottobre

1974

209. Salerno C, John R, Ovadi J, Churchich J, Ferraro A, Bellato P, Biocca S, **Ferrari M**, Turano C, Fasella P (1974). Interaction between aminotransferases and dehydrogenases. In: IX Meeting of the Federation of European Biochemical Societies, Budapest. p. abs. S2B3, Budapest, Hungary, 25-30 August

14 luglio 2022

