PERSONAL INFORMATION

Riccardo Cicchi

WORK EXPERIENCE

01/2020 - present
Group Leader - European Laboratory for Non-linear Spectroscopy (LENS), Sesto Fiorentino, Italy
Research topic: Tissue Biomechanics

01/2014 - present
Responsible of the Biomedical Optics Team - National Institute of Optics, National Research Council (CNR), Florence, Italy
Research topic: Biomedical Optics; Biophotonics

06/2012 - present
Researcher (Level III) - National Institute of Optics, National Research Council (CNR), Florence, Italy
Research topic: Non-linear imaging; Tissue imaging; Collagen organization; Fluorescence lifetime imaging; Fiber-probe spectroscopy

03/2011 - present
Lecturer – University of Florence, Florence, Italy
"Optical Methods in Biology + Lab" – Master in Molecular Biotechnology

01/2010 - 06/2012
Senior Post-doc– European Laboratory for Non-linear Spectroscopy (LENS), Sesto Fiorentino, Italy
Research topic/activities: In-vivo non-linear imaging of human skin; Metabolic imaging

01/2007 - 12/2009
Post-doc– Department of Physics, University of Florence, Sesto Fiorentino, Italy
Research topic: Non-linear microscopy; Fluorescence lifetime imaging; Metabolic imaging

01/2004 - 12/2006
PhD student – Department of Physics, University of Florence, Sesto Fiorentino, Italy
Research topic/activities: Non-linear laser imaging of human skin;

EDUCATION AND TRAINING

2020
Project Management – Basic - Italian Institute of Project Management (ISIPM)

2010
Intensive Training "Entrepreneurship in Photonics" – Vrije Universitet Brussel (VUB), Bruxelles, Belgium

From 2004 to 2006
PhD in Physics – Department of Physics, University of Florence, Sesto Fiorentino, Italy
Dissertation: *"Non-linear laser imaging of human skin"*

From 1998 to 2003
M.Sc. in Physics – Department of Physics, University of Florence, Sesto Fiorentino, Italy
Dissertation theme: *Mechanical study of a single molecular motor using optical tweezers*

WORK ACTIVITIES

National habilitations
National Scientific Qualification for **Associate Professor** (*Abilitazione Scientifica Nazionale, ASN*, *II Fascia*). Academic Disciplines: Experimental Physics of Matter (02/B1);

Awards
2012: "Best innovation award for a multilateral project" – Innovation Village, Photonics Europe 2012, Bruxelles, Belgium
2008: FABLS Fellow – Fluorescence Applications in Biomedical and Life Science – "Non-linear metabolic imaging of human tissues"

Editorial activity	**Reviewer** for Nature Scientific Reports, Journal of Biophotonics, Journal of Biomedical Optics, Optics Express, Biomedical Optics Express, Biophysical Journal, Plos One, Scanning, Lasers in Surgery and Medicine, Journal of Microscopy, Journal of Biomechanics, Analytical and Bioanalytical Chemistry, Digestive Disease and Science, and others **Project Reviewer** for European Commission (ERC, Marie Curie), The Research Council of Norway, Hungarian Academy of Science, Nederland Organisation for Scientific Research, Czech Science Foundation, Agence Nationale de la Recherche Francaise, Central Finance and Contracting Agency – Latvia, Italian Ministry of Economic Development **Review Editor** on the Editorial Board of Life (ISSN 2075-1729) and Guest Editor of Molecules (ISSN 1420-3049) - *Time resolved luminescence imaging and spectroscopy*
Member of Boards	Artes 4.0 – Member of the Technical & Scientific Committee and of the Academic Board European Commission – Advisor Expert in the field of medical devices European Commission – Referee Expert for Marie Curie Actions
Presentations	Speaker at national and international congresses and schools – 6 as Invited Speaker - European Conference on Biomedical Optics (ECBO), BIOS – Photonics West, Photonics Europe, SIBPA (Italian Society of Applied Biophysics), Focus on Microscopy (FOM), School on Multimodal Optical Imaging
Patents	R. Cicchi, F. S. Pavone, J. L. Lagarto, PCT/EP2020/069962 A.R. Picon, A.M. Ayarzaguena, C.L. Saratxaga, E.T. Fernandez, R. Cicchi, EP16169719.8 E. Baria, R. Cicchi, S. Morselli, F.S. Pavone, M. Gacci,Italian Patent 102020000012610
Grant (last 10 years)	2023-2025 PRIN 2022, Progetto ALIAS, € 200.000 (coordinator) 2023-2024 Fondo di Beneficenza Intesa San Paolo 2022, € 72.000 (coordinator) 2019-2022 Italian Ministry of Economic Development, ARTES4.0, € 319.640 (PI of Unit LENS) 2018-2020 Tuscany Region, POR FSE 2014 2020, FOTOBIO, € 54.000 (PI of Unit) 2017-2020 European Commission, H2020-ICT-2016-1 732111 PICCOLO, € 360.000 (PI of Unit) 2017-2020 Tuscany Region, PAR FAS 2014, GLIOMICS, € 309.600 (PI of Unit) 2018-2019 Ente CRFi Foundation, call 2017, € 10.000 (Coordinator) 2016-2017 Ente CRFi Foundation, call 2015, IMMUNE, € 10.000 (Coordinator) 2014-2017: Italian Ministry of Health –Young Researcher, GR-2011-02349626, € 227.273 (Coordinator) 2014-2017: European Commission, ERANET Biophotonics+, LITE, € 105.000 (PI of Unit)

ADDITIONAL INFORMATION

Selected Publications

H-index: 32, 69 publications in peer-reviewed journals, 2883 citations (source: Scopus).

1. T.A. Shaik, E. Baria, X. Wang, F. Korinth, J.L. Lagarto, C. Hoppener, F.S. Pavone, V. Deckert, J. Popp, **R. Cicchi**, and C. Krafft, *Structural and Biochemical Changes in Pericardium upon Genipin Cross-Linking Investigated Using Nondestructive and Label-Free Imaging Techniques*, Anal Chem 94, 1575-1584 (2022)
2. T.A. Shaik, J.L. Lagarto, E. Baria, M. Goktas, P.I. Onoja, K.G. Blank, F.S. Pavone, J. Popp, C. Krafft, and **R. Cicchi**, *Monitoring Changes in Biochemical and Biomechanical Properties of Collagenous Tissues Using Label-Free and Nondestructive Optical Imaging Techniques*, Anal Chem 93, 3813-3821 (2021)
3. J.L. Lagarto, F. Villa, S. Tisa, F. Zappa, V. Shcheslavskiy, F.S. Pavone, and **R. Cicchi**, *Real-time multispectral fluorescence lifetime imaging using Single Photon Avalanche Diode arrays*, Scientific Reports 10, 8116 (2020)
4. R. Mercatelli, T. Triulzi, F.S. Pavone, R. Orlandi, and **R. Cicchi**, *Collagen ultrastructural symmetry and its malignant alterations in human breast cancer revealed by Polarization SHG microscopy*, J Biophoton 13, e202000159 (2020)
5. J.L. Lagarto, V. Shcheslavskiy, F.S. Pavone, and **R. Cicchi**, *Simultaneous fluorescence lifetime and Raman fiber-based mapping of tissues*, Optics Letters 45, 2247-2250 (2020)
6. J.L. Lagarto, V. Shcheslavskyi, F.S. Pavone, and **R. Cicchi**, *Real-time fiber-based fluorescence lifetime imaging with synchronous external illumination: A new path for clinical translation*, J Biophoton 12, e201960119 (2019)
7. R. Mercatelli, S. Mattana, L. Capozzoli, F. Ratto, F. Rossi, R. Pini, D. Fioretto, F. S. Pavone, S. Caponi, and **R. Cicchi**, *Morpho-mechanics of human collagen superstructures revealed by all-optical correlative micro-spectroscopies*, Communications Biology 2, 117 (2019)
8. I. Costantini, **R. Cicchi**, L. Silvestri, F. Vanzi, and F.S. Pavone, *In-vivo and ex-vivo optical clearing methods for biological tissues: review*, Biomed. Opt. Exp. 10, 5251-5266 (2019)
9. **R. Cicchi**, C. Matthäus, T. Meyer, A. Lattermann, B. Dietzek, B. R. Brehm, J. Popp, and F. S. Pavone, *Characterization of collagen and cholesterol deposition in atherosclerotic arterial tissue using non-linear microscopy*, J. Biophoton. 7, 135-143 (2014)
10. **R. Cicchi**, D. Kapsokalyvas, M. Troiano, P. Campolmi, C. Morini, D. Massi, G. Cannarozzo, T. Lotti, and F.S. Pavone, *In vivo non-invasive monitoring of collagen remodelling by two-photon microscopy after micro-ablative fractional laser resurfacing*, J Biophoton 7, 914-925 (2014)

11. **R. Cicchi**, A. Sturiale, G. Nesi, D. Kapsokalyvas, G. Alemanno, F. Tonelli, and F.S. Pavone, *Multiphoton morpho-functional imaging of healthy colon mucosa, adenomatous polyp and adenocarcinoma*, Biomed Opt Express 4, 1204-1213 (2013)
12. **R. Cicchi**, N. Vogler, D. Kapsokalyvas, B. Dietzek, J. Popp, and F. S. Pavone, *From molecular structure to tissue architecture: collagen organization probed by SHG microscopy*, J Biophoton 6, 129-142 (2013)
13. **R. Cicchi**, A. Crisci, A. Cosci, G. Nesi, D. Kapsokalyvas, S. Giancane, M. Carini, and F. S. Pavone, *Time- and spectral-resolved two-photon imaging of healthy bladder mucosa and carcinoma-in-situ*, Opt. Express 18, 3840-3849 (2010)
14. **R. Cicchi**, D. Massi, S. Sestini, P. Carli, V. De Giorgi, T. Lotti, and F. S. Pavone, *Multidimensional non-linear laser imaging of Basal Cell Carcinoma*, Opt Express 15, 10135-10148 (2007)
15. **R. Cicchi**, F. S. Pavone, D. Massi, and D. D. Sampson, *Contrast and depth enhancement in two-photon microscopy of human skin ex vivo by use of optical clearing agents*, Opt. Express 13, 2337-2344 (2005)