

**Jorge Ripoll Lorenzo**

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**PERSONAL INFORMATION**

Family name, First name: RIPOLL LORENZO, JORGE

Researcher identifier(s) (ORCID, Research ID): 0000-0001-8856-7738, J-8134-2012

Webpage: <http://www.researcherid.com/rid/J-8134-2012>

**Present Work Address (since Sept. 2012)**

Universidad Carlos III Date of birth: 24th July 1971

Dept. of Bioengineering and Aerospace Engineering Nationality: Spanish

Avda. de la Universidad, 30

28911 Leganés, Madrid

Spain

email: [jorge.ripoll@uc3m.es](mailto:jorge.ripoll@uc3m.es)

**Former Work Address (2005-2012)**

Inst. of Electronic Structure & Laser - FORTH

P.O. Box 1527, 71110 Heraklion, Crete

Tel: 00-30-2810-391922, Fax. 00-30-2810-391305

**EDUCATION**

**PhD degree** **2000**

**Institute of Material Science of Madrid & Universidad Autónoma of Madrid**

Thesis Title: "Light propagation in turbid media with biomedical applications"

Supervisor: M. Nieto-Vesperinas, Tutor: Juan Jose Saenz. Date: 10 October 2000.

**Visiting Scholar** **2000 (4 weeks)**

**University of Pennsylvania (UPENN), Philadelphia (U.S.A.),**

Objective: Experiments on Diffuse Optical Tomography

Supervisor: Arjun. G. Yodh.

**Visiting Scholar** **1999 (6 weeks)**

**University College London (U.K.)**

Objective: Forward and Inverse Problems in Optical Tomography

Supervisor: Simon Arridge.

**Visiting Scholar** **1998 (6 weeks)**

**University of Pennsylvania (UPENN), Philadelphia (U.S.A.),**

Objective: Optical Characterization of turbid media

Supervisor: Arjun. G. Yodh.

**Visiting Scholar** **1997 (6 weeks)**

**European Microwave Signature Laboratory (EMSL), Joint Research Center, Ispra Italy**

Objective: Experiments on the area of electromagnetic scattering from random rough surfaces

Supervisor: Joaquim Fortuny.

**Diploma** **1996**  
**Universidad Autónoma of Madrid**  
Graduated in Physics, specific training in Physical Optics

**Specialization**

- (i) **main field:** Bio-Optics, Optical Imaging
- (ii) **other fields:** Electromagnetism, Waves in Complex media, Inverse Problems
- (iii) **current research interest:** 3D in-vivo imaging of fluorescent proteins

**Courses-Workshops Attended**

2010 Workshop on Advanced Microscopy Techniques organized by EMIL/DIMI in Antwerp, Belgium  
2009 Lecture on Principles of Optics, for the European Master in Molecular Imaging, in Crete, Greece  
2007 Topics in Molecular Imaging Winter School, Organized by EMIL/DIMI, Les Houches, France  
2006 Molecular Imaging Summer School, Heidelberg, Germany  
2005 Molecular Imaging Summer School, Crete, Greece.  
2002 NATO Workshop, "Wave Propagation in Multiple Scattering Media", Cargese, France  
2000 NATO Workshop, "Photonic BandGap and Localization", in Crete, Greece.  
1999 NATO Workshop, "Diffuse Waves in Complex Media", Les Houches, France.  
1996 Introduction to Teledetection, given by Infocarto.  
1995 Universidad Complutense de Madrid summer course with title "200 years or Rare Earths".  
1994/95 Course on C+ given by the Universidad Autonoma of Madrid.

**CURRENT POSITION**

**Universidad Carlos III of Madrid, Spain, 1/06/2017 - present**

*Visiting Professor* at the Dept. of Biomedical Engineering and Aerospace Engineering. Coordinator of two bachelor courses of 3<sup>rd</sup> and 4<sup>th</sup> year.

**4D-Nature Imaging Consulting, S. L. 17/06/2013 - present**

*Founding Member and Main Promoter* of the company, funded in July 2013 with the main goal of developing custom-made applications in biomedical imaging research applications. Position: Chief Technical Officer

**PREVIOUS POSITIONS**

**Universidad Carlos III of Madrid, Spain, 16/06/2013 – 15/06/2017**

*Marie Curie CIG* at the Dept. of Biomedical Engineering and Aerospace Engineering. Objective: In-vivo optical imaging. Host supervisor: Manuel Desco.

**Universidad Carlos III of Madrid, Spain, 1/09/2012 – 15/06/2013**

*Visiting Professor-Marie Curie CIG* at the Dept. of Biomedical Engineering and Aerospace Engineering. Coordinator of two bachelor courses of 3<sup>rd</sup> and 4<sup>th</sup> year.

**University of Fribourg, Switzerland, 1/02/2012 - 30/09/2012**

*Visiting Professor* at the Dept. of Physics. Objective: Development of Selective Plane Illumination Microscopy for soft condensed matter applications. Host: Frank Scheffold.

**University of Bern, Switzerland, 1/01/2012 - 31/08/2012**

*Research Consultant* at the Theodor Kocher Institute. Objective: Setup of a Selective Plane Illumination Microscope. Host: Jens Stein.

**Universidad Carlos III of Madrid, Spain, 01/09/2011 - 31/08/2012**

*Instructor* (profesor asociado) at the Dept. of Biomedical Engineering and Aerospace Engineering. Objective: Lectures on optics. Hosts: Juanjo Vaquero and Manuel Desco.

**ETH Zurich, Switzerland, 01/02/2011 - 31/01/2012**

*Visiting Professor* on Sabbatical from FORTH at the Institute for Biomedical Engineering. Objective: Combined Optical/MRI imaging at the Animal Imaging Center. Host: Markus Rudin.

**Institute for Electronic Structure and Laser – FORTH, 2008-2012**

*Associate Professor* (B-researcher, **Tenure**)

Objective: “Optical Biomedical Applications”

**Visen Medical, Boston - MA, 01/09/2008 - 31/08/2009**

*Research Consultant* on Fluorescence Molecular Tomography. Host: Wael Yared.

**Institute for Electronic Structure and Laser – FORTH, 2005-2008**

Associated Researcher (Γ-researcher, **Tenure Track**)

Objective: “Fluorescence Molecular Tomography and Biomedical Applications”

**Visiting Fellow 2002-2007**

**Center for Molecular Imaging Research, Harvard Medical School and Massachusetts General Hospital Boston, Massachusetts, USA**

Objective: “Fluorescence Molecular Tomography”

Supervisors: V. Ntziachristos, R. Weissleder

Duration: Short stays of a few weeks every few months.

**Research Fellow in Radiology, 2002 (3 months)**

**Center for Molecular Imaging Research, Harvard Medical School and Massachusetts General Hospital Boston, Massachusetts, USA**

Objective: “Fluorescence Molecular Tomography”

Supervisors: V. Ntziachristos, R. Weissleder

**Post-Doc Fellow 2000-2005**

**Institute for Electronic Structure and Laser – FORTH, Crete, Greece**

Objective: “Study of light propagation in disordered media with gain and biomedical applications”

Supervisor: E. N. Economou

**Professional Employment**

<b>Visiting Prof.</b>	June 2017-present	Universidad Carlos III of Madrid
<b>Marie Curie Fellow</b>		
<b>Career Integration Grant</b>	June 2013-June 2017	Universidad Carlos III of Madrid
<b>Visiting Prof.</b>	Sept. 2012-June 2012	Universidad Carlos III of Madrid
<b>Visiting Prof.</b>	Jan-Sept 2012	University Fribourg, Switzerland
<b>Visiting Prof.</b>	2011-2012	ETH, Zurich
<b>Assoc. Research Prof.</b>	2008-2012	Institute for Electronic Structure and Laser-FORTH, Greece ( <b>Tenure Position</b> )
<b>Associated Researcher</b>	2005-2008	Institute for Electronic Structure and Laser – FORTH, Greece ( <b>Tenure-track position</b> ).
<b>Post-Doctoral Fellow</b>	2000-2004	Institute for Electronic Structure and Laser – FORTH, Greece
<b>Research Fellow</b>	2002	Massachusetts General Hospital and Harvard Medical School, Boston

**FELLOWSHIPS AND AWARDS**

**Scholarship 1996-2000**

**Instituto de Ciencia de Materiales de Madrid & Universidad Autonoma de Madrid**

Scholarship from the Spanish Ministry of Education and Culture (MEC), under number FP96-02633328N.

Supervisor: Manuel Nieto Vesperinas

**Premio de Excelencia en investigación de la UC3M 2016** (research excellence prize of the UC3M)

**Chinese Academy of Sciences Fellowships for Young International Scientists, 2011-2012**

Collaborative Project with the lab of Prof. Jie Tian. Expenses include exchange of students and travel.

Tasks addressed: Optical Projection Tomography.

### **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

- PhD Thesis* **Anikitos Garofalakis** (IESL - FORTH), 'Fluorescence Molecular Tomography and in-vivo applications', Presented March 2007. Supervisor: J. Ripoll; Tutor: E. N. Economou.
- PhD Thesis* **Heiko Meyer** (IESL - FORTH), 'In-vivo optical projection tomography'. Presented in 2009. Supervisor: J. Ripoll; Tutor: F. Grosveld (The Netherlands).
- PhD Thesis* **Rosy Favicchio** (IMBB - FORTH), 'Development of Fluorescence Molecular Tomography for in vivo functional imaging of tumour hypoxia'. Co-supervisors: J. Ripoll and S. Papamtheakis. Presented in May 2010.
- PhD Thesis* **Florian Stuker** (IBT-ETH Zurich), 'Hybrid Imaging: Combining Fluorescence Molecular Tomography with Magnetic Resonance Imaging', Co-supervisors: M. Rudin (ETH) and J. Ripoll. Presented in April 2011 at ETH-Zurich.
- PhD Thesis* **Juan Aguirre** (UC3M), 'Studies on Fluorescence Diffuse Optical Tomography', Co-supervisors: Juanjo Vaquero (UC3M) and J. Ripoll. Presented in February 2012 at Universidad Carlos III, Madrid.
- Postdoctoral* **Olga Kravsenyuk** (FORTH), 2005 – 2007 "Realtime 3D imaging". **Marie Curie** Incoming International Fellowship Contract: MIF1-CT-2005-008330
- Postdoctoral* **Udo Birk** (FORTH), 2007-2009 "Structured Illumination in Optical Tomography". **Marie Curie** European Incoming Fellowship Contract: MEIF-CT-2006-41827. Proposal Acronym: STRIPES.
- Postdoctoral* **Tom Vettenburg** (UC3M), 2014-2016. Project Acronym: SURE-ALISM. **Marie Curie** European Incoming Fellowship Contract: FP7 PEOPLE-2013-IEF, No. 622643.

### **Master and Bachelor Thesis Supervision**

- Master* **Stelios Psycharakis** (IESL - FORTH), 'Quantitation and Sensitivity Characterization of Fluorescence Molecular Tomography'. Work related to testing and validating fluorescence molecular tomography in controlled phantoms. Presented in March 2008. Supervisor: J. Ripoll. Advisor: Giannis Zacharakis.
- Master* **Maria Simantiraki** (IESL - FORTH), 'Multispectral Fluorescence Molecular Tomography'. Work related to spectroscopic fluorescence tomography. Presented in June 2009. Supervisor: J. Ripoll. Advisor: Giannis Zacharakis.
- Bachelor Thesis* **Alvaro Gomariz** (UC3M), 'Resolution study of optical tomography systems in microscopy'. Work related to developing a protocol to study the resolution of laser sheet microscopy systems. Presented in June 2014. Supervisor: J. Ripoll.
- Bachelor Thesis* **Elena Remacha** (UC3M), '3D Optical Imaging of the Development of the Zebrafish Heart'. Development of tools for measurement and analysis of the beating zebra fish heart. Presented in June 2014. Supervisor: J. Ripoll.
- Bachelor Thesis* **Cristina Herráez** (UC3M), 'Estudio de técnicas de microiluminación con fibra óptica y su

aplicación a métodos de diagnóstico”. Presented in October 2014. Supervisor: J. Ripoll.

*Bachelor Thesis* **Lorena Pérez** (UC3M), “Endoscopia multimodal de fluorescencia infrarroja”. Presented in July 2015. Supervisor: J. Ripoll. Tutor: P.A. García.

*Bachelor Thesis* **Guillermo Lozano** (UC3M), “Deconvolución Espectral de Datos 3D de Microscopía de Haz Láser Plano”. Presented in March 2015. Supervisor: J. Ripoll.

*Bachelor Thesis* **Isabel Martín** (UC3M), “Microscopia Endoscopica Confocal”. Presented in October 2015. Supervisor: J. Ripoll. Tutor: P.A. García.

*Bachelor Thesis* **Blanca Zufria** (UC3M), “DESARROLLO DE SISTEMA DE IMAGEN ÓPTICA AVANZADA PARA ESTUDIOS DE INFLAMACIÓN”. Presented in July 2016. Supervisor: J. Ripoll.

*Bachelor Thesis* **Miguel Ángel Llorente** (UC3M), “MONTAJE Y CONTROL DE LEDS PARA APLICACIONES EN BIOMEDICINA”. Presented in October 2016. Supervisor: J. Ripoll.

*Bachelor Thesis* **Miguel Rodríguez** (UC3M), “CUANTIFICACIÓN DE IMÁGENES DE ENDOSCOPIA ÓPTICA DE FLUORESCENCIA”. Presented in October 2016. Supervisor: J. Ripoll.

*Bachelor Thesis* **Maria Ávila** (UC3M), “Fluorescence Life-time imaging approaches in microscopy”. Presented in July 2017. Supervisor: J. Ripoll.

*Bachelor Thesis* **Manuel Montero** (UC3M), “Simultaneous Spectral Imaging at Several Excitation and Emission Wavelengths”. Presented in July 2017. Supervisor: J. Ripoll.

*Bachelor Thesis* **Ana Algora** (UC3M), “Análisis de la marcha mediante sensores inerciales y su aplicación en paciente de Parkinsons”. Presented in July 2017. Co-Supervisor: J. Ripoll. w

## **TEACHING EXPERIENCE**

### **Universidad Carlos III of Madrid, Spain, 2019/2020**

Course: *Introduction to Medical Imaging*, 4<sup>th</sup> year of Bioengineering. Coordinator. Duration: One semester (6 ECTS) - ongoing

Course: *Transport phenomena in biomedical engineering*, 3<sup>rd</sup> year of Bioengineering. Coordinator and main lecturer. Duration: One semester (6 ECTS). – ongoing

### **Universidad Carlos III of Madrid, Spain, 2018/2019**

Course: *Introduction to Medical Imaging*, 4<sup>th</sup> year of Bioengineering. Coordinator. Duration: One semester (6 ECTS)

Course: *Transport phenomena in biomedical engineering*, 3<sup>rd</sup> year of Bioengineering. Coordinator and main lecturer. Duration: One semester (6 ECTS).

### **Universidad Carlos III of Madrid, Spain, 2017/2018**

Course: *Introduction to Medical Imaging*, 4<sup>th</sup> year of Bioengineering. Coordinator. Duration: One semester (6 ECTS)

Course: *Transport phenomena in biomedical engineering*, 3<sup>rd</sup> year of Bioengineering. Coordinator and main lecturer. Duration: One semester (6 ECTS).

### **Universidad Carlos III of Madrid, Spain, 2016/2017**

Course: *Introduction to Medical Imaging*, 4<sup>th</sup> year of Bioengineering. Coordinator and main lecturer. Duration: One semester (6 ECTS)

Course: *Transport phenomena in biomedical engineering*, 3<sup>rd</sup> year of Bioengineering. Coordinator and main lecturer. Duration: One semester (6 ECTS).

**Universidad Carlos III of Madrid, Spain, 2015/2016**

Course: *Introduction to Medical Imaging*, 4<sup>th</sup> year of Bioengineering. Coordinator and main lecturer.  
Duration: One semester (6 ECTS)

Course: *Transport phenomena in biomedical engineering*, 3<sup>rd</sup> year of Bioengineering. Coordinator and main lecturer. Duration: One semester (6 ECTS).

**Universidad Carlos III of Madrid, Spain, 2014/2015**

Course: *Introduction to Medical Imaging*, 4<sup>th</sup> year of Bioengineering. Coordinator and main lecturer.  
Duration: One semester (6 ECTS)

Course: *Transport phenomena in biomedical engineering*, 3<sup>rd</sup> year of Bioengineering. Coordinator and main lecturer. Duration: One semester (6 ECTS).

**Universidad Carlos III of Madrid, Spain, 2013/2014**

Course: *Introduction to Medical Imaging*, 4<sup>th</sup> year of Bioengineering. Coordinator and main lecturer.  
Duration: One semester (6 ECTS)

Course: *Transport phenomena in biomedical engineering*, 3<sup>rd</sup> year of Bioengineering. Coordinator and main lecturer. Duration: One semester (6 ECTS).

**Universidad Carlos III of Madrid, Spain, 2012/2013**

Course: *Transport phenomena in biomedical engineering*, 3<sup>rd</sup> year of Bioengineering. Coordinator and main lecturer. Duration: One semester (6 ECTS).

**Universidad Carlos III of Madrid, Spain, 2011/2012**

Course: *Introduction to Bioengineering*, basic lectures on optics and light prop-agation in tissues.  
Duration: three lectures and three laboratory classes. Duration: One semester (6 ECTS)

**ETH Zurich, Switzerland, 2011/2012**

Course: Lectures on the course *Optical Imaging - Basic Principles and Biomedical Applications*, as part of the Biomedical Engineering Master during the Autumn Semester 2011. Duration: One semester (6 ECTS).

**European Master in Molecular Imaging (EMIM), 2009-2011**

Course: Lectures on the course *Principles of Optics*, as part Molecular Imaging curriculum. Duration: Two lectures per year.

**ORGANISATION OF SCIENTIFIC MEETINGS**

2002	<b>Biophotonics 2002</b> , Crete, Greece	Organizing Committee
2006	<b>Molecular Imaging Summer School</b> , Crete, Greece	Organizing Committee

**INSTITUTIONAL RESPONSIBILITIES**

2016-present	<b>Subdirector of the Dept. of Biomedical Engineering</b> , Universidad Carlos III de Madrid
2005-2011	<b>Research Faculty member</b> , Institute for Electronic Structure and Laser – FORTH

**COMMISSIONS OF TRUST**

2005	<b>Society for Molecular Imaging Meeting</b> , Cologne	Co-chair
2006	<b>Optical Society of America – Bios2006</b> , San Jose, USA	Optical Imaging program Committee
2006	<b>Society for Molecular Imaging Meeting</b> , Hawaii, USA	Scientific committee
2007	<b>European Society for Molecular Imaging</b> , Naples	Scientific Committee
2007	<b>Society for Molecular Imaging</b> , Rhode Island	Scientific Committee
2008	<b>World Molecular Imaging Congress</b> , Nice	Scientific Committee
2009	<b>European Society for Molecular Imaging</b> , Barcelona	Scientific Committee
2010	<b>Optical Society of America – BIOS2010</b> , Florida	Drug development program committee

2010	<b>European Society for Molecular Imaging</b> , Warsaw	Scientific Committee
2011	<b>European Society for Molecular Imaging</b> , Leiden	Scientific Committee
2011	<b>Topics in Photonics and BioOptics</b> , Russia	Scientific Committee
2013	<b>Int. Symposium on Biomedical Imaging 2013</b> , San Fco.	Scientific Committee
2013	<b>Topical Problems in Biophotonics 2013</b> , Russia	Scientific Committee
2014	<b>European Society for Molecular Imaging</b> , Antwerp	Scientific Committee, chair
2014	<b>World Molecular Imaging Congress</b> , Seoul	Scientific Committee, Ed. Session
2015	<b>Bioimaging</b> , Lisbon	Scientific Committee
2015	<b>European Society for Molecular Imaging</b> , Tubingen	Scientific Committee
2015	<b>European Society for Molecular Imaging</b>	Best PhD Award Committee
2016	<b>European Society for Molecular Imaging</b> , Leiden	Scientific Committee

### Evaluator

- External evaluator for the EU Physics panel
- External evaluator for the German Research Foundation
- External evaluator for the Swiss Science Foundation
- External evaluator for H2020
- External evaluator for the Spanish National Agency of Projects Evaluations(ANEP)
- External evaluator for the EU Physics panel
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### Refereed Journals

Journal of the Optical Society of America A, Applied Optics, Physical Review Letters, Optics Communications Nature Methods	Journal of the Optical Society of America B, Optics Express, IEEE Transactions in Medical Imaging, Journal of Optics A Nature Communications	Optics Letters, Physical Review E, Physics in Medicine and Biology. Journal of Biomedical Optics Optica
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**Editor** for **Scientific Reports**, Nature Group, 2015-2017.

### MEMBERSHIPS OF SCIENTIFIC SOCIETIES

- Member of the Optical Society of America
- Founding Member of the European Society for Molecular Imaging
- Member of the Council of the European Society of Molecular Imaging (ESMI), 2008-2016

### MAJOR COLLABORATIONS

#### Lab Description

During his time at IESL - FORTH J. Ripoll was in charge of the In-vivo Imaging Group which consisted of several post-docs, PhD students and master students. The lab is located in the old animal house facilities at the IMBB-FORTH, where three main setups have been developed:

- [1] For whole animal imaging (Mice, in collaboration with Clio Mamalaki and Si s Papamatheakis);
- [2] For large specimen imaging (mainly for in-vivo imaging in marine biology, in collaboration with the aquarium of crete with Aspasia Sterioti and Pascal Divanach and with the Biology group in UOC, Maroudio Kent);
- [3] For *in-vivo* tomography in microscopic samples, such as *Drosophila melanogaster* (in collaboration with B. Savakis), *C. elegans* (in collaboration with N. Tav-ernarakis) and *Parhyale hawaiiensis* (in collaboration with M. Averof).

These activities are also being pursued in my current lab at the UC3M. Members of the In-vivo imaging group at FORTH were: G. Zacharakis (senior post-doc, now in charge of the setups at FORTH), A. Zacharopoulos (senior post-doc), R. Favicchio (post-doc), Shouping Zhu (visiting Post-doc), Dong Di (visiting PhD), U. Birk (post-doc), A. Sarasa-Renedo (post-doc), S. Atroops (EST trainee), L. Lambert (EST trainee), J. Aguirre (EST trainee), O. Kravsentyuk (post-doc), A. Martin (visiting PhD student), H. Meyer (phD) A. Darrell (PhD), S. Physcharakis (master) and M. Simantiraki (master).

Current and past members of the optical imaging lab are Alvaro Gomariz (Bachelor thesis), Elena Remacha (Bachelor Thesis) and Guillermo Lozano (Bachelor Thesis). Current work involves the development of an endoscope, where Pablo Gomez (pre-doc) is developing software and hardware.

### **Collaborations**

Main collaborations of J. Ripoll include developing FMT setups with the CNB in Madrid (C. Martinez and J. Gutierrez), the Weizmann Institute in Israel (M. Nee-man), the ETH in Zurich (M. Rudin, with whom I spent one year as a Visiting Professor) and the group of U. Schiabel in Borstel, Germany. Other strong collaborations exist with the CNIC in Madrid (M. Torres), the Aquarium of Crete (A. Sterioti), the MRC (D. Kioussis), TUM (V. Ntziachristos), the MGH (Umar Mahmood), the ESPCI in Paris (R. Carminati), the UAM in Madrid (J.J. Saenz), the U. of Fribourg (F. Scheffold, with whom I spent 6 months as a Visiting Professor), Jens Stein at U.Bern (where I built a Selective Plane Illumination Setup) and lately the Chinese Academy of Sciences (J. Tian).

## **EXPLOITATION AND TRANSFER OF KNOWLEDGE**

### **Patents**

[1] Jorge Ripoll, Vasilis Ntziachristos and K. Madden, "Imaging volumes with arbitrary geometries in contact and non-contact tomography", PCT/US2003/017558, filed 04.06.2003, Pub. No. WO/2003/102558. Pub. Date: 11.12.2003.

[2] Jorge Ripoll, and Vasilis Ntziachristos "Method and system for free space optical tomography of diffuse media", PCT/US2004/003229, Filed: 05.02.2004, Pub. No. WO/2004/072906, Pub. Date: 26.08.2004.

[3] Vasilis Ntziachristos, Jorge Ripoll and Giannis Zacharakis, "Method and system for tomographic imaging using fluorescent proteins", PCT/US2005/007652, Filing date: 10.03.2005, Pub. No. WO/2005/089637, Pub. Date: 29.09.2005.

[4] Jorge Ripoll and Vasilis Ntziachristos, "Removal of boundaries in diffuse media", PCT/GR2006/000068, Filed: 15.12.2006, Pub. No. WO/2007/072085, Pub. Date: 28.06.2007.

[5] Jorge Ripoll, Wael Yared, Joshua Kemper, "Systems and methods for tomographic imaging in diffuse media using a hybrid inversion technique", PCT/US2010/046973. Filed: 27.08.2010, Pub. No. WO/2011/025950, Pub. Date: 03.03.2011.

[6] Jorge Ripoll, Wael Yared, Joshua Kemper, "Systems and methods for virtual index-matching of diffusive media", PCT/US2010/049831, filed 22.09.2010, Pub. No. WO/2011/038006, Pub. Date: 31.03.2011.

[7] Wael Yared, Joshua Kemper, Jorge Ripoll, Alicia Arranz, 'SYSTEMS, METHODS, AND APPARATUS FOR IMAGING OF DIFFUSE MEDIA FEATURING CROSS-MODALITY WEIGHTING OF FLUORESCENT AND BIOLUMINESCENT SOURCES', Filed with United States Application Serial No. Serial No. 61/714,198, filed in the United States Patent and Trademark Office on October 15, 2012

[8] Jorge Ripoll and Alicia Arranz, "Microscopio y procedimiento para la generación de imágenes 3D de una colección de muestras", P201431546, filed 21/10/2014 by Universidad Carlos III de Madrid. Exploited by 4D-Nature. PCT/ES2015/070455 PCT/ES2015/070455 (10.06.2015) MICROSCOPE AND METHOD FOR GENERATING 3D IMAGES OF A COLLECTION OF SAMPLES

[9] Jorge Ripoll and Alicia Arranz, P201730887 , Dispositivo rotativo de cambio de objetivo para microscopio de haz láser plano. Filed (4.07.2017) by Universidad Carlos III de Madrid.

[10] Jorge Ripoll and Alicia Arranz, PCT/ES2016/070714 PCT/ES2016/070714 (07.10.2016) MULTIPLE-LOADING DEVICE FOR A FLAT LASER BEAM MICROSCOPE. P201531401 (01.10.2015)ES2607633 A1 (03.04.2017) Dispositivo de carga múltiple para microscopio de haz láser plano. Filed by Universidad Carlos III de Madrid.

[11] Jorge Ripoll and Alicia Arranz, PCT/ES2017/070184 (05.10.2017) WO/2017/168026 SAMPLE-HOLDING DEVICE FOR A MICROSCOPE. (29.10.2017) 2634913 Dispositivo de sujeción de muestras para microscopio. Filed by Universidad Carlos III de Madrid. Exploited by 4D-Nature.

[12] Jorge Ripoll Lorenzo, P201830912, Microscopio y procedimiento de haz láser plano para muestras extensas (Light Sheet Microscope and procedure for extended samples), filed 21/09/2018 by Universidad Carlos III de Madrid. Exploited by 4D-Nature.

[13] Jorge Ripoll Lorenzo, P201830913, Dispositivo móvil de generación de imágenes 3D mediante haz láser plano (Mobile 3D imaging system based on light sheet microscopy), filed 21/09/2018 by Universidad Carlos III de Madrid. Exploited by 4D-Nature.

### **Consulting**

Up to current date I have been consultant for the following technology-based companies:

**Genex Technologies** (2002), on light propagation in tissues and their effect on 3D imaging systems

**Scanco** (2002), on optical imaging

**Visen Medical** (2003-2010), on image reconstruction algorithms Scanco (2004), on optical imaging techniques

**Perkin Elmer** (2010-2012), on image reconstruction algorithms

### **RESEARCH ACTIVITIES**

#### **International Projects**

##### **2000-01 "Quantum transport and electronic states in rough surfaced nanowires" (Transporte cuántico y estados electronicos en nanohilos con superficies rugosas)**

Universidad Autonoma of Madrid

Financed by the VII Comision Mixta de Cooperacion Cientifico Tecnica Hispano-Griega.

Responsible in Spain: Prof. J.J Saenz (UAM).

Responsible in Greece: I.G. Tigelis (U. Athens).

##### **2000-2001 "Phase Coherent dynamics of Hybrid nanostructures",**

Institute for Electronic Structure and Laser - FORTH

European Research Network Contract #FMRX-CT96-0042,

Coordinator: C. Lambert (U. Lancaster)

Local Coordinator: E. N. Economou (FORTH)

Objectives: Light propagation in Multiple Scattering Media

##### **2001-2004 "Optical Mammography: Imaging and characterisation of breast lesions by pulsed near-infrared laser light"**

Institute for Electronic Structure and Laser - FORTH

Proposal # QLRT-1999-30690, in Quality of Life and Management of Living Resources, European Commission.

Tasks performed: Characterization of biopsy samples, numerical validation of analytical expressions.

Coordinator: H. Rinneberg (PTB)

Local Coordinator: T. G. Papazoglou (FORTH)

**2001-2003 “Optical Methods for Medical Diagnosis and Monitoring of Diseases”**

Institute for Electronic Structure and Laser – FORTH

Proposal # QLG1-CT-2000-01464, in Quality of Life and Management of Living Resources, Community Research, European Commission.

Coordinator: R. Steiner (ILM)

Local Coordinator: T. G. Papazoglou (FORTH)

Tasks performed: Local project management, Development of a data-base with tissue optical properties.

**2002-2003 “Nanoscale Dynamics, Coherence and Computation”**

Institute for Electronic Structure and Laser - FORTH

European Research Network Contract # HPRN-CT-2000 –00144

Objectives: Light propagation in Multiple Scattering Media with Gain

Coordinator:

Local Coordinator: E. N. Economou (FORTH)

**2004-2007 “Transcription complex dynamics controlling specific gene expression programs”**

Proposal acronym: TRANS-REG

Institute for Molecular Biology and Biotechnology - FORTH

STREP project contract: LSHG-CT-2004-502950

Project Coordinator: I. Talianidis (IMBB)

Local Project Coordinator: J. Ripoll (FORTH)

Tasks addressed: Analysis of FRAP and FLIP images.

**2004-2009 “Integrated Technologies for in vivo molecular imaging”**

Proposal Acronym: MOLECULAR IMAGING

Institute for Electronic Structure and Laser and Institute for Molecular Biology and Biotechnology - FORTH

Integrated Project Contract: LSHG-CT-2003-503259

Project Coordinator: E. N. Economou (FORTH)

Project Manager: J. Ripoll (FORTH)

Tasks addressed: Fluorescence Molecular Tomography of mice in vivo, development of fast and accurate inverse algorithms.

**2004 – 2008 “Early Stage Training for molecular imaging techniques”**

Proposal Acronym: EST – MOLEC IMAG

IESL, IMBB, IACM, ICS

Integrated Project Contract: MEST-CT-2004-007643

Project Coordinator: J. Papamatheakis

Project Manager: J. Ripoll

Tasks addressed: Training on molecular imaging techniques at all levels of interdisciplinarity.

**2005 – 2007 “Realtime 3D imaging”**

Marie Curie Incoming International Fellowship Contract: MIF1-CT-2005-008330

Project Coordinator: J. Ripoll

IIF Researcher: Olga Kravtsentsyuk

Tasks addressed: Fast inversion schemes for real time in-vivo optical tomography.

**2007-2009 “Structured Illumination in Optical Tomography”**

Marie Curie European Incoming Fellowship Contract: MEIF-CT-2006-41827

Proposal Acronym: STRIPES

Project Coordinator: J. Ripoll

EIF Researcher:: Udo Birk

Tasks addressed: Structure illumination schemes for optical tomography at the microscopy level

**2008-2010 “Imaging the dynamics and treatment of pulmonary tuberculosis in murine model”**

Bill and Melinda Gates Foundation

Project Coordinator: U. Schiablo

Local Coordinator: J. Ripoll

Tasks addressed: In-vivo quantitative 3D imaging of tubercle bacilli: testing of tomography setup in FORTH and building of setup at MRC, London.

**2008-2011 “Hybrid Fluorescence Molecular Tomography (FMT) – X-ray Computed Tomography (XCT) method and system”**

Project Acronym: FMT-XC

Collaborative EU Project, Ref. 201792.

Project Coordinator: V. Ntziachristos

Local Coordinator: J. Ripoll

Tasks addressed: Development of theoretical and experimental approaches (spectral measurements, new inversion schemes) for fluorescence imaging combined with CT anatomical information.

**2011-2012 Chinese Academy of Sciences Fellowships for Young International Scientists**

Collaborative Project with the lab of Prof. Jie Tian. Expenses include exchange of students and travel.

Tasks addressed: Optical Projection Tomography.

**2012-2016 ‘Model-based preclinical development of anti-tuberculosis drug combinations’**

Project Acronym: PreDiCT-TB. IMI Joint Undertaking, Ref. 115337. Project Coordinator: Justin Green. Local Coordinator(UC3M): JJ. Vaquero (UCL). Tasks addressed: Imaging approaches in tuberculosis.

**2013-2017 ‘High Throughput Optical Tomography’**

Project Acronym: HIGH THROUGHPUT TOMO. EU, Marie Curie PICIG12-GA-2012-333632 Project Coordinator (UC3M): Jorge Ripoll (UC3M). Tasks addressed: High throughput tomographic imaging.

**2013-2017 ‘Intelligent Fast Interconnected and Efficient devices for Frontier Exploitation in Research and Industry.’**

Project Acronym: INFIERI. EU, MARIE-CURIE FP7-PEOPLE-2012-INT, 317446. Local Coordinator(UC3M): JJ Vaquero (UC3M). Collaborator: J. Ripoll (UC3M). Tasks addressed: Development of imaging approaches for efficient devices.

**2013-2017 ‘An innovative, interdisciplinary model system for studying the developmental origins of sleep and brain rhythms (PPI-B)’**

THE INTERNATIONAL HUMAN FRONTIER SCIENCE PROGRAM OR-GANIZATION (HFSP) Project Coordinator: Evan Balaban (McGill) Local Coordinator(UC3M): JJ Vaquero. Collaborator: J. Ripoll. Tasks addressed: Microscopy approaches for chick brain imaging.

**2014-2016 SURE-ALISM**

Project Acronym: SURE-ALISM. FP7 PEOPLE-2013-IEF, No. 622643. Project Coordinator: Jorge Ripoll. EIF Researcher: Tom Vettenburg. Tasks addressed: super-resolution light sheet microscopy.

**2018 – 2021 SENSITIVE:**

Early Detection of cancer onset based on sensing field cancerization at the organ level (conv. H2020-FETOPEN-2016-2017).

Reference ID 801347. Coordinator: Akademia, Athens. Local Principal researcher: Jorge Ripoll, at UC3M. [https://cordis.europa.eu/project/rcn/216333\\_en.html](https://cordis.europa.eu/project/rcn/216333_en.html)

**National Projects**

**1995-99 “Laser Materials and frequency autodoublers” (Materiales Laser y Autodobladores de Frecuencia) MAT95-0152 (CICYT)**

Financed by: CICYT, Spain

Universidad Autonoma of Madrid

Objectives: Optical spectroscopy of active centers.

Supervisors: LuisaE. Bausá and José García Solé.

Involvement: Research Student

**1996-00 “Propagation and dispersion of classical and quantum waves in random media: Localization and characterization of hidden objects”, (Estudio de la dispersión de ondas clásicas y cuánticas en estructuras aleatorias) PB95-0061**

Financed by: DGICYT, Spain

Institute of Material Science of Madrid (ICMM)

Objectives: Detection and characterization of lesions in turbid media with biomedical application

Supervisor: Manuel NietoVesperinas.

**2003 –2006 “Υπερφασματική Οπτική Τομογραφία” (Hyperspectral Optical Tomography)**

Proposal Acronym: YOT

Institute for Electronic Structure and Laser & University Hospital Crete

Project Contract: ΠΕΝΕΔ 2001 01ΕΔ342

Project Coordinator: E.N. Economou

Project Manager: J. Ripoll

Tasks Addressed: In-vivo optical tomography

**2014-2017 `Optical Imaging in Mesoscopic Tissues: theory computation and biological applications'**

Project Acronym: MESO-IMAGING. MINECO, RETOS 2013, No. de Ref: FIS2013-41802-R. Project

Coordinator: Jorge Ripoll (CO-PI) and Miguel Moscoso (CO-PI). Local Project Coordinator: Jorge

Ripoll.. Tasks addressed: Imaging in mesoscopic systems.

**2017-2021 `Ultrafast optical imaging with phase information'**

Project Acronym: LIVE-PHASE-IMAGING. MINECO, RETOS 2016, No. de Ref: FIS2016-77892-R.

Project Coordinator: Jorge Ripoll (CO-PI) and Miguel Moscoso (CO-PI). Local Project Coordinator:

Jorge Ripoll.. Tasks addressed: Live Phase Optical Imaging in mesoscopic systems.

## **DISSEMINATION**

### **Invited Talks**

- 2019** **AOP 2018, Keynote Lecture**, Lisbon  
“Scattering killed the (light) sheet... or did it?”
- 2016** **SPAOM 2016**, Bilbao  
“3D Live Imaging of Fast Dynamic Processes”
- 2016** **SPIE BIOS**, San Francisco  
“Automatic Focusing in the beating zebrafish heart”
- 2015** **Topical Problems in Biophotonics**, Nizhny-Novgorod, Russia  
“Novel advances in multispectral in-vivo fluorescence tomography”
- 2014** **REMOA meeting**, Madrid  
`Workshop 6: Illumination sources and detection systems'
- 2014** **European Molecular Imaging Doctorate (EMIDS) Summer School**, Heraklion  
`Principles of Optics in Molecular Imaging'
- 2014** **Hot Topics In Molecular Imaging (TOPIM)**, Les Houches, France `Optical Tomography: In-vivo imaging of Drosophila melanogaster Development'
- 2014** **LIVIm seminars**, London.  
`New Optical Tomography Approaches in in-vivo'
- 2013** **M+Vision, Madrid**  
`Optical Imaging Approaches at BiiG'
- 2013** **Distinguished Lecture Seminar**, CNIC, Madrid.  
`The Role of Optics in Preclinical Molecular Imaging: New Advances and Challenges'
- 2012** **Preclinical Imaging in Small Laboratory Animals (PRIMA)**, Dublin `Optical Imaging' in `Quantitative Imaging Analysis & Application Specific Imaging'
- 2012** **World Molecular Imaging Congress (WMIC 2012)**, Dublin

- 2012 **M+Vision, Madrid**  
 `Optical Tomography' Educational Session.  
 `Current optical approaches for 3D imaging from organs to whole animals' in `Preclinical Optical Imaging'.
- 2012 **Hot Topics In Molecular Imaging (TOPIM), Les Houches, France**  
 `Principles of Optical Imaging' and `Why is imaging an ill-posed problem?'.
- 2011 **CIMST Industry Day 2011, ETH Zurich**  
 `Scattering and its role in optical imaging' *Keynote Lecture*.
- 2011 **FENS-INSBRO Training Center, Imaging Brain Function in Animals and Humans, Lausanne**  
 `Concurrent Optical and MR Imaging: New Approaches and Hurdles to Overcome'.
- 2011 **Topical Problems in Biophotonics 2011, Russia**  
 `Optical tomography in small scattering samples: New illumination and detection schemes in microscopy for 3D in-vivo imaging'.
- 2011 **WavePro on the occasion of Costas Soukoulis 60th Birthday, Crete** `Imaging in multiple scattering media: Theory and application'.
- 2011 **ISBI 2011, Chicago, USA**  
 "Tutorial T-4: Optics for In Vivo Imaging and Monitoring in Biology and Medicine"
- 2010 **Workshop for Diagnostic Molecular Imaging, Milan, Italy**  
 "Principles and application of Fluorescence Tomography in drug discovery"
- 2009 **C. elegans Annual Meeting, "Tools for high resolution and high throughput protein localization analysis"**  
 "Optical Projection Tomography for 3D visualization of fluorescent protein localization and anatomy in *C. elegans*"
- 2008 **Advanced Laser Technologies '08, Hungary**  
 "Applications of In Vivo Optical Tomography in Biology"
- 2008 **High level seminar on molecular imaging, MiNaTec, Grenoble, France**  
 "In Vivo Optical Tomography"
- 2008 **Workshop for Diagnostic Molecular Imaging, Milan, Italy**  
 "In-vivo Fluorescence Imaging: Principles and Examples"
- 2008 **NanoBioEurope 2008, Barcelona, Spain**  
 "Integrated Technologies for In-vivo Molecular Imaging"
- 2008 **LIMAT-Workshop "Frontier Research in Fundamental Optics applied to Detection, Quantification and Monitoring of in-vivo Functional Parameters", Gstaad, Switzerland**  
 "Optical Tomography Applications in Biology"
- 2007 **An Interdisciplinary Workshop on Mathematical Methods in Biomedical Imaging and Intensity-Modulated Radiation Therapy (IMRT), Pisa, Italy**  
 "Removal of boundaries and free space propagation in diffuse wave imaging"
- 2007 **Frontiers in Science and Technology: Nano-Photonics And Optics, Miraflores, Spain**  
 "Imaging with Light in Biology: From diffusion to ballistic"
- 2007 **Trends in Nanotechnology, San Sebastian, Spain**  
 "Obtaining information at the molecular level with mesoscopic fluorescent measurements"
- 2007 **Topical Problems of Biophotonics, Nizhny-Novgorod, Russia.**  
 "Optical Tomography – 3D in-vivo Imaging of Fluorophore distribution in tissues"
- 2007 **III International Workshop On Photonic And Electronic Materials, San Sebastian, Spain**  
 "In-vivo Optical Tomography – From Diffusion to Ballistic"
- 2007 **II DIMI Workshop: Molecular Imaging in drug discovery, Milan, Italy**  
 "Fluorescence in-vivo Imaging in small animals"
- 2006 **International Conference on Nanoscience ICON2006, Venezuela**  
 "Probing at the Nanoscale: Novel Techniques for Imaging Molecular Function In-vivo"
- 2006 **European Society of Molecular Imaging, Paris, France**  
 "MI Integrated Project: Integrated Technologies for in-vivo Molecular Imaging"
- 2006 **Educational Programme Mathematics in Industry, Madrid, Spain**  
 "Approximate Methods for 3D In-Vivo Imaging of Fluorescent Proteins in Mice"
- 2006 **Novel Imaging Technologies in Disease Models, Rehovot, Israel**  
 "In-vivo Optical Imaging of Fluorescent Protein Distribution in Mice"

- 2005 European Biotech Crossroads, Lille, France**  
“New imaging technologies for functional genomics and diagnosis”
- 2005 EuroMouse Conference, Venice, Italy**  
“Molecular Imaging: integrated technologies for in-vivo molecular imaging”
- 2005 Non-Invasive Imaging Techniques in Research, Barcelona, Spain**  
“Introduction to optical imaging”
- 2005 Applied Inverse Problems 2005, Cirencester, United Kingdom**  
“Non-contact Approaches and Surface Reconstruction in Optical Tomography”
- 2005 New Imaging Techniques in Biology Opening Doors - British Council, Nerja, Spain**  
“3D in-vivo imaging of gene expression in mice”
- 2004 Society for Molecular Imaging, St. Luis, USA**  
“Novel Advances in Optical Tomography of Fluorescent Proteins and Probes”
- 2004 Saratov Fall Meeting, Saratov, Russia**  
“Multiple Projection Non-Contact Fluorescence Tomography System”
- 2004 Photonic and Electronic Materials, Donostia, Spain**  
“Non contact optical tomography for 3D imaging in tissue”
- 2003 Saratov Fall Meeting, Saratov, Russia**  
“Non contact optical tomography”
- 2002 BioPhotonics 2002, Crete, Greece**  
“Optical Characterization of Small Biopsy Samples”

**Selected Invited Talks at Universities and Institutes**

- 2019 Xidian University, Xian**  
‘Fast Imaging using Light Sheet Microscopy’
- 2016 Reunión del Grupo de Fibras Ópticas y Procesado de Señal (FOPS), Valencia**  
‘In-vivo optical imaging application in biology: where diffuse and ballistic light meet’.
- 2016 Seminarios de Investigación IiSGM 2016, Madrid**  
‘Light Sheet Microscopy and Applications in 3D Virtual Histology ex-vivo and in-vivo’
- 2014 Technical University Munich (TUM), Munich**  
‘Sheet happens: haphazard adventures in light sheet microscopy’.
- 2014 Instituto de Ciencias de Materiales de Madrid (CSIC), Madrid**  
‘Recent Advances in Optical Tomography’.
- 2014 Chinese Academy of Sciences, Beijing**  
‘New Advances in Light Sheet Microscopy’.
- 2014 Instituto de Ciencias de Materiales de Madrid (CSIC), Madrid**  
‘Direct and Indirect Methods in Optical Tomography: theory and applications’.
- 2013 BSRC Alexander Fleming, Athens**  
‘Optical Tomography of Microscopic specimens in-vivo’.
- 2013 CNIO Distinguished Seminars 2013, Madrid**  
‘Multispectral in-vivo FMT in small animal imaging’.
- 2013 Centro Nacional de Biotecnología, Madrid**  
‘Direct and Indirect Optical Methods for Whole Specimen Imaging in-vivo’.
- 2013 Biomagune, San Sebastian**  
‘Hybrid Optical Approaches for Preclinical In-vivo Imaging: new methods and validation techniques’.
- 2013 Instituto Cajal (CSIC), Madrid**  
‘All Creatures Great and Small, Can We (optically) Image Them All?’.
- 2013 Institut de Ciències Fòniques (ICFO), Barcelona**  
‘From Ballistic to Diffusive Regimes: Light Propagation Models and Applications for In-vivo Optical Tomography’.
- 2013 Universidad Autónoma of Madrid**  
‘In-vivo Optical Tomography Approaches and the Effect of Scatter-ing’.
- 2012 University of Fribourg**  
‘Why is imaging an ill-posed problem?’.
- 2011 University of Basel**

- `In vivo optical imaging'.  
**2011 Leibniz-Zentrum für Medizin und Biowissenschaften, Borstel, Germany**  
`New Developments in Optical Methods for in-vivo imaging'.  
**2011 Institute of Biomedical Engineering- ETH, Zurich, Switzerland**  
"New Applications of Optics in in-vivo imaging"  
**2011 CEC-BIOMAGUNE, San Sebastian, Spain**  
"Optical Imaging In-vivo: from insects to vertebrates"  
**2010 Fleming Institute, Athens, Greece**  
"In-vivo Optical Imaging: does size really matter?"  
**2010 Theodor Kocher Institute, University of Bern, Switzerland**  
"In-vivo Optical Tomography: from Ballistic to Diffuse light Propagation"  
**2010 CEA, Paris, France**  
"In-vivo Optical Imaging: the influence of scattering"  
**2010 Xian Technical University, Xian, China**  
"Applications of Optical Tomography in Biology: Diffuse and Ballistic Imaging"  
**2010 European Master for Molecular Imaging lectures, University of Crete, Greece**  
"Principles of Optics"  
**2010 Optics and Lasers in BioEngineering, Universidad Carlos III, Madrid, Spain**  
"The origins of color in nature"  
**2009 European Master for Molecular Imaging lectures, University of Crete, Greece**  
"Principles of Light Propagation"  
**2009 University of Pennsylvania**  
"Applications of Optical Tomography in Biology: Diffuse and Ballistic Imaging"  
**2008 National Center for Biotechnology, Madrid, Spain**  
"Whole Animal In-vivo Applications of Fluorescence Tomography"  
**2008 Weizmann, Rehovot, Israel**  
"Optical Tomography in Biology"  
**2007 ESPCI, Paris, France**  
"Optical Tomography Applications in Biology"  
**2007 CNIC, Madrid, Spain**  
"Quantitative in-vivo Optical Tomography in Biology"  
**2006 IDIBAPS, Barcelona, Spain**  
"In-vivo imaging of GFP expression in whole animals"  
**2004 National Center for Biotechnology, Madrid, Spain**  
"3D In-vivo Imaging of Fluorescent Signals in Whole Animals"  
**2002 Massachusetts Institute of Technology, Boston, USA**  
"Time efficient methods in Diffuse Optical Tomography"  
**2002 Center for Molecular Imaging Research, Harvard University, Boston, USA**  
"Efficient Forward Methods in Diffuse Optical Tomography"  
**2001 Institute of Material Science of Madrid**  
"Imaging in turbid media with the diffusion approximation"

### **Book Chapters:**

A. Sarasa-Renedo, A. Darrell and J. Ripoll, "Applications of Optical Tomography in Biomedical Research", Handbook of Photonics for Medical Science, V. Tuchin ed. CRC Press, USA, 2010.

R. Favicchio, G. Zacharakis, A. Garofalakis and J. Ripoll, "Optical Imaging: Fluorescence Molecular Tomography", in *Optical and Digital Image Processing*, Eds. Crisobal, Schelkens and Thienpont,. Published by Wiley-Vch, Berlin, 2011.

A. Arranz, M. Rudin, C. Zaragoza and J. Ripoll, 'Fluorescent Molecular Tomography for in vivo imaging of mouse atherosclerosis', to be published in *Methods in Mouse Atherosclerosis* of the series *Methods in Molecular Biology*, Springer, 2014.

A. Marcos, J. J. Vaquero, and J. Ripoll, Optical properties of tissues in the NIR: Their relevance for optical bioimaging chapter, for the book "*Near-Infrared-Emitting Nanoparticles for Biomedical Applications*",

edited by A. Benayas and D. Jaque. Springer 2019.

### **Monographs**

J. Ripoll, 'Principles of Diffuse Light Propagation', World Scientific Press, ISBN-13 978-981-4293-76-1, Singapore 2012.

### **Peer Reviewed Publications:**

- [1] Ripoll, J., Madrazo, A., and Nieto-Vesperinas, M., "Scattering of electromagnetic waves from a body over a random rough surface," *Optics Communications* 142(4-6), 173–178 (1997).
- [2] Ripoll, J., Bausá, L.E., Terrile, C., Solé, J.G., and Díaz, F., "Optical spectroscopy of Nd<sup>3+</sup>-doped KGd(WO<sub>4</sub>)<sub>2</sub> monocrystals," *Journal of Luminescence* 72-74, 253–254 (1997).
- [3] Ripoll, J., and Nieto-Vesperinas, M., "Scattering Integral Equations for Diffusive Waves. Detection of Objects Buried in Diffusive Media in the Presence of Interfaces," *J. Opt. Soc. Am. A* 16, 1453–1465 (1998).
- [4] Ripoll, J., Nieto-Vesperinas, M., and Carminati, R., "Spatial resolution of diffuse photon density waves," *Journal of the Optical Society of America A* 16(6), 1466 (1999).
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- [13] Ntziachristos, V., Ripoll, J., and Weissleder, R., "Would near-infrared fluorescence signals propagate through large human organs for clinical studies?," *Optics letters* 27(5), 333–335 (2002).
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- [2] J. Ripoll and M. Nieto-Vesperinas, "Scattering Integral Equations in Diffusive Media", OSA Spring Topical Meetings, Advances in Optical Imaging and Photon Migration, Orlando 8-11 of March 1998.
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[10] Spectral Imaging as a Tool for Accurate Measurement of Vascularization in Mice, Alicia Arranz, Ariadne Androulidaki, Berber Mol, Ana Sarasa-Renedo, Christos Tsatsanis and Jorge Ripoll , European Society for Molecular Imaging Meeting, Barcelona 2009.

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