

BASIC
INFORMATION

Researcher and Assistant Professor
 Departament de Física Aplicada
Universitat de Barcelona
 C/ Martí i Franqués 1
 Barcelona, 08028, Spain
 Phone: +34-934039221
 E-mail: oarteaga@ub.edu
 ORCID iD: 0000-0001-9015-0237
 ResearcherID: B-9568-2015
 Web: www.mmpolarimetry.com
 Publication metrics: [GoogleScholar](#), [Scopus](#)
 Spanish citizenship
 Birth date: 10/06/1982

RESEARCH
EXPERTISE**Polarization of light and optical characterization of materials.**

- Determination of the dielectric tensor of isotropic and anisotropic materials with spectroscopic ellipsometry
- Experimental nanophotonics: optical properties of two dimensional and three dimensional plasmonic metamaterials
- Light propagation in bianisotropic media, asymmetric light transmission effects
- Mueller matrix polarimetry and Mueller matrix microscopy
- Chiroptics of organic materials and nanostructures. Assessment of chirality with polarimetric methods
- Design and construction of spectroscopic and imaging polarimeters
- Polarization and coherence theory. Analysis of depolarization

EDUCATION

Universitat de Barcelona, Barcelona, Spain

Ph.D., **Physics**, October 2010

- Thesis Topic: *Mueller matrix polarimetry of chiral anisotropic media*
- Committee: Prof. Josep Maria Ribó, Prof. Isabel Alonso, Dr. Gerald E. Jellison
- Adviser: Dr. Adolf Canillas
- [Department of Applied Physics and Optics](#)

M.S., **Physics engineering**, July 2007

- Thesis Topic: *Circular dichroism and optical activity measurements with generalized ellipsometry*
- Adviser: Dr. Adolf Canillas
- [Department of Applied Physics and Optics](#)

B.S., **Physics**, June 2004

- Optics and electromagnetism specialization

POSTDOCTORAL
APPOINTMENTS**New York University**

January 2011 to March 2013

[Department of Chemistry, Molecular Design Institute](#),

- [National Science Foundation](#) Material research
 - “GOALI: Chiroptical Anisotropy ” (grant #1105000)
 - PI: [Professor Bart Kahr](#)

École Polytechnique

October 2010 to December 2010

[Laboratoire de physique des interfaces et couches minces](#), [École Polytechnique](#)

- Group of [Professor Razvigor Ossikovski](#)

- [1] E. Kuntman, M. A. Kuntman, **O. Arteaga**. Formalism of optical coherence and polarization based on material media states. *Phys. Rev. A*, 95, 063819 (2017). [Link](#).
- [2] R. Ossikovski, **O. Arteaga**, Jérémy Vizet. On the equivalence between Youngs double slit and crystal double refraction interference experiments. *J. Opt. Soc. Am. A*, *in press* (2017).
- [3] B. Drling, A. Sánchez, **O. Arteaga**, A. Veciana, M. Isabel Alonso, M. Campoy Quiles. Controlled Pinning of Conjugated Polymer Spherulites and its Application in Detectors. *Adv. Opt. Mat.*, *in press* (2017).
- [4] **O. Arteaga**. A historical revision of the differential Stokes-Mueller formalism: discussion. *J. Opt. Soc. Am. A*, 34, 410-414 (2017). [Link](#).
- [5] E. Kuntman, M. A. Kuntman, **O. Arteaga**. Vector and matrix states for Mueller matrices of nondepolarizing optical media. *J. Opt. Soc. Am. A*, 34, 80-86 (2017). [Link](#).
- [6] J. M. Ribó, Z. El-Hachemi, **O. Arteaga**, A. Canillas, J. Crusats . Hydrodynamic Effects in Soft-Matter Self-Assembly: The Case of J-Aggregates of Amphiphilic Porphyrins. *The Chemical Record*, (2017). [Link](#)
- [7] E. Kuntman, A. Canillas, **O. Arteaga**. Retrieval of the non-depolarizing components of depolarizing Mueller matrices by using symmetry conditions and least squares minimization. *Appl. Surf. Sc.*, *In Press* (2016). [Link](#).
- [8] **O. Arteaga**, S. Nichols, J. Antó. Back-focal plane Mueller matrix microscopy: Mueller conoscopy and Mueller diffractometry. *Appl. Surf. Sc.*, *In Press* (2016). [Link](#).
- [9] S. M. Nichols, **O. Arteaga**, A. T. Martin, B. Kahr. Partially coherent light propagation in stratified media containing an optically thick anisotropic layer. *Appl. Surf. Sc.*, *In Press* (2016). [Link](#).
- [10] **O. Arteaga**, Z. El-Hachemi, A. Canillas. J. Crusats, M. Rovira, J. M. Ribó. Reversible and irreversible emergence of chiroptical signals in J-aggregates of achiral 4-sulfonatophenyl substituted porphyrins: intrinsic chirality vs. chiral ordering in the solution. *Chem. Comm.*, 52, 10874-10877 (2016). [Link](#).
- [11] X. Cui, S. M. Nichols, **O. Arteaga**, J. Freudenthal, F. Paula, A. G. Shukenberg, B. Kahr. Dichroism in Helicoidal Crystals. *J. Am. Chem. Soc.*, 138, 12211-12218 (2016). [Link](#).
- [12] A. Carnicer, **O. Arteaga**, B. Javidi, J. Sué-Negre, Authentication of gold nanoparticle encoded pharmaceutical tablets using polarimetric signatures. *Opt. Lett.*, 41, 4507-4510 (2016). [Link](#).
- [13] E. Kuntman, **O. Arteaga**. Decomposition of a depolarizing Mueller matrix into its nondepolarizing components by using symmetry conditions. *Appl. Opt.*, 55, 2543-2550 (2016). [Link](#).
- [14] Y. Kim, B. Yeom, **O. Arteaga**, S. J. Yoo, S. G. Lee, J. G. Kim, N. A. Kotov. Reconfigurable chiroptical nanocomposites with chirality transfer from the macro-to the nanoscale. *Nature materials*, 15, 461-468 (2016). [Link](#).
- [15] **O. Arteaga**. Natural optical activity vs circular Bragg reflection studied by Mueller matrix ellipsometry. *Thin Solid Films*, *In Press* (2016). [Link](#).

- [16] **O. Arteaga**, J. Sancho-Parramon, S. Nichols, B. M. Maoz, A. Canillas, S. Bosch, G. Malkovich, B. Kahr. Relation between 2D/3D chirality and the appearance of chiroptical effects in real nanostructures. *Opt. Express*, 24, 2242-2252 (2016). [Link](#).
- [17] **O. Arteaga**, A. Canillas, Z. El-Hachemi, J. Crusats, J. M. Rib. Structure vs. excitonic transitions in self-assembled porphyrin nanotubes and their effect on light absorption and scattering. *Nanoscale*, 7, 20435-20441 (2015). [Link](#).
- [18] **O. Arteaga**. Spectroscopic sensing of reflection optical activity in achiral AgGaS₂. *Opt. Lett.*, 40, 4277-4280 (2015). [Link](#).
- [19] E. Kuntman, **O. Arteaga**, J. Antó, D. Cayuela, E. Bertran. Conversion of a polarization microscope into a Mueller matrix microscope. Application to the measurement of textile fibers. *Opt. Pura y Aplicada*, 48, 309-316 (2015). [Link](#).
- [20] A. Carnicer, **O. Arteaga**, E. Pascual, A. Canillas, S. Vallmitjana, B. Javidi, E. Bertran. Optical security verification by synthesizing thin films with unique polarimetric signatures. *Opt. Lett.*, 40, 5399-5402 (2015). [Link](#).
- [21] S. Nichols, **O. Arteaga**, A. Martin, B. Kahr. Measurement of transmission and reflection from a thick anisotropic crystal modeled by a sum of incoherent partial waves. *J. Opt. Soc. Am. A*, 32, 2049-2057 (2015). [Link](#).
- [22] **O. Arteaga**, E. Kuntman, J. Antó, E. Pascual, A. Canillas and E. Bertran. Mueller matrix microscopy on a Morpho butterfly . *J. of Phys. Conf. Series*, 605, 393-339(2015). [Link](#).
- [23] R. Ossikovski, **O. Arteaga**. Integral decomposition and polarization properties of depolarizing Mueller matrices. *Opt. Lett.*, 40, 954-957 (2015). [Link](#).
- [24] **O. Arteaga**. Useful Mueller matrix symmetries for ellipsometry . *Thin Solid Film*, 571, 584-588 (2014). [Link](#).
- [25] **O. Arteaga**, E. Garcia-Caurel, R. Ossikovski. Elementary polarization properties in the backscattering configuration. *Opt. Lett.*, 39, 6050-6053 (2014). [Link](#).
- [26] **O. Arteaga**. Optical activity of oriented molecular systems in terms of the magnetoelectric tensor of gyrotropy. *J. Opt.*, 16, 125707 (2014). [Link](#).
- [27] **O. Arteaga**, M. Baldrís, J. Antó, A. Canillas, E. Pascual, E. Bertran. Mueller matrix microscope with a dual continuous rotating compensator setup and digital demodulation. *Appl. Opt.*, 53, 2236-2245 (2014). [Link](#).
- [28] S. Nichols, J. Freudenthal, **O. Arteaga**, B. Kahr. Imaging with photoelastic modulators. *Proc. SPIE 9099*, 909912 (2014). [Link](#).

- [29] **O. Arteaga**, J. Freudenthal, S. Nichols, A. Canillas and B. Kahr. Transmission ellipsometry of anisotropic substrates and thin films at oblique incidence. Handling multiple reflections. *Thin Solid Films*, 571, 701-705. (2014). [Link](#).
- [30] **O. Arteaga**, B. Maoz, S. Nichols, G. Markovich and B. Kahr. Complete polarimetry on the asymmetric transmission through subwavelength hole arrays. *Opt. Express*, 22, 13719-13832 (2014). [Link](#).
- [31] A. S. Gupta, **O. Arteaga**, R. Haislmaier, B. Kahr and V. Gopalan. Reinvestigation of Electric Field-Induced Optical Activity in α -Quartz: Application of a Polarimeter With Four Photoelastic Modulators . *Chirality*, 26, 430-433(2014). [Link](#).
- [32] **O. Arteaga**, E. Kuntman . Beyond polarization microscopy: Mueller matrix microscopy with frequency demodulation . *Proc. SPIE*, 90990R (2014). [Link](#).
- [33] R. Ossikovski, **O. Arteaga**. Statistical meaning of the differential Mueller matrix of depolarizing homogeneous media. *Opt. Lett.*, 39, 4470-4473 (2014). [Link](#).
- [34] **O. Arteaga**. Number of independent parameters in the Mueller matrix representation of homogeneous depolarizing media. *Opt. Lett.*, 38, 1131-1133 (2013). [Link](#).
- [35] **O. Arteaga** and B. Kahr. Characterization of homogenous depolarizing media based on Mueller matrix differential decomposition. *Opt. Lett.*, 38, 1134-1136 (2013). [Link](#).
- [36] A. Rojas, **O. Arteaga**, B. Kahr and M. Cambor. Synthesis, structure, and optical activity of HPM-1, a pure silica chiral zeolite. *J. Am. Chem. Soc.*, 135, 11975-11984 (2013).[Link](#).
- [37] Z. El-Hachemi, **O. Arteaga**, A. Canillas, J. Crusats, A. Sorrenti, S. Veintemillas-Verdaguer and J. M. Ribó. Achiral-to-chiral transition in benzil solidification: analogies with racemic conglomerates systems showing deracemization. *Chirality*, 25, 393-339(2013). [Link](#).
- [38] **O. Arteaga**, J. Freudenthal, B. Wang, S. Nichols and B. Kahr. Circular dichroism with multiple photoelastic modulators. *Chem. Today.*, 30, 6805-6817 (2012).[Link](#).
- [39] **O. Arteaga**, J. Freudenthal, B. Wang, and B. Kahr. Mueller matrix polarimetry with four photoelastic modulators: theory and calibration. *Appl. Opt.*, 54, 6805-6817 (2012). [Link](#).
- [40] **O. Arteaga**, S. Nichols, and B. Kahr. Mueller matrices in fluorescent scattering. *Opt. Lett.*, 37, 2835-2837 (2012). [Link](#).
- [41] A. Sorrenti, Z. El-Hachemi, **O. Arteaga**, A. Canillas, J. Crusats, and J.M. Ribó. Kinetic control of the supramolecular chirality of porphyrin J-aggregates. *Chem. Eur. J.*, 18, 8820-8826 (2012). [Link](#).

- [42] **O. Arteaga**, J. Freudenthal, and B. Kahr. Reckoning electromagnetic principles with polarimetric measurements of anisotropic optically active crystals. *J. Appl. Cryst.*, 45, 279-291 (2012). [Link](#).
- [43] S. Portal-Marco, M. A. Vallvè, **O. Arteaga**, J. Ignés-Mullol, C. Corbella, and E. Bertran. Structure and physical properties of colloidal crystals made of silica particles. *Colloids and Surf. A*, 401, 0927-7757 (2012). [Link](#).
- [44] B. Kahr, **O. Arteaga**. Arago's Best Paper, *ChemPhysChem* 13, 79-88 (2012). [Link](#).
- [45] **O. Arteaga**, A. Canillas, J. Crusats, Z. El-Hachemi, J. Llorens, A. Sorrenti and J.M. Ribó. Flow Effects in Supramolecular Chirality. *Isr. J. Chem.*, 51, 1007-1016 (2011). [Link](#).
- [46] K. Okano, **O. Arteaga**, J.M. Ribó, and T. Yamashita. Emergence of chiral environments by effect of flows: the case of an ionic oligomer and congo red dye. *Chem. Eur. J.*, 34, 9288-9292 (2011). [Link](#).
- [47] H. Takechi, **O. Arteaga**, J.M. Ribó, and H. Watarai. Chiroptical measurement of chiral aggregates at liquid-liquid interface in centrifugal liquid membrane cell by Mueller matrix and conventional circular dichroism methods. *Molecules*, 16, 3636-3647 (2011). [Link](#).
- [48] Z. El-Hachemi, **O. Arteaga**, A. Canillas, J. Crusats, J. Llorens and J. M. Ribó. Chirality generated by flows in pseudocyanine dye J-aggregates: Revisiting 40 years old reports, *Chirality*, 23, 585-592 (2011). [Link](#).
- [49] **O. Arteaga**, E. Garcia-Caurel, and R. Ossikovski. Anisotropy coefficients of a Mueller matrix, *J. Opt. Soc. Am. A*, 26, 548-553 (2011). [Link](#).
- [50] F. Barroso, S. Bosch, N. Tort, **O. Arteaga**, J. Sancho-Parramon, E. Jover, E. Bertran and A. Canillas. Detection and characterization of single nanoparticles by interferometric phase modulated ellipsometry, *Thin Solid Films*, 519, 2801-2805 (2011). [Link](#).
- [51] **O. Arteaga**, Z. El-Hachemi, A. Canillas and J. M. Ribó. Transmission Mueller Matrix Ellipsometry of Chirality Switching Phenomena, *Thin Solid Films*, 519, 2617-2623 (2011). [Link](#).
- [52] **O. Arteaga**, A. Canillas, J. Crusats, Z. El-Hachemi, J. Llorens, E. Sacristan and J. M. Ribó. Emergence of supramolecular chirality by flows, *ChemPhysChem*, 11, 3511-3516 (2010). [Link](#).
- [53] **O. Arteaga**. On the existence of Jones birefringence and Jones dichroism, *Opt. Lett.*, 35, 1359-1360 (2010). [Link](#).
- [54] **O. Arteaga** and A. Canillas. Analytic inversion of the Mueller-Jones polarization matrices for homogeneous media, *Opt. Lett.*, 35, 559-561 (2010). [Link](#).
- [55] **O. Arteaga**, A. Canillas, J. Crusats, Z. El-Hachemi, G. E. Jellison, J. Llorca and J. M. Ribó. Chiral biases in solids by effect of shear gradients: A speculation on the deterministic origin of biological homochirality, *Origins of Life*, 40, 27-40 (2009). [Link](#).
- [56] **O. Arteaga**, C. Escudero, G. Oncins, Z. El-Hachemi, J. Llorens, J. Crusats, A. Canillas and J. M. Ribó Reversible Mechanical Induction of Optical Activity in Solutions of Soft-Matter Nanophases, *Chem. Asian J.*, 4, 1687-1696 (2009). [Link](#).
- [57] **O. Arteaga**, A. Canillas, and G. E. Jellison. Determination of the components of the gyration tensor of quartz by oblique incidence transmission two-modulator generalized ellipsometry, *Appl. Opt.*, 48, 5307-5317 (2009). [Link](#).

- [58] **O. Arteaga**, A. Canillas, R. Purrello, and J. M. Ribó. Evidence of induced chirality in stirred solutions of supramolecular nanofibers, *Opt. Lett.*, 34 , 2177-2179 (2009). [Link](#).
- [59] **O. Arteaga** and A. Canillas. Pseudopolar decomposition of the Jones and Mueller-Jones exponential polarization matrices, *J. Opt. Soc. Am. A*, 26, 783-793 (2009). [Link](#).
- [60] Z. El-Hachemi, C. Escudero, **O. Arteaga**, A. Canillas, J. Crusats, G. Mancini, R. Purrello, A. Sorrenti, A. D'Urso, and J. M. Ribó. Chiral sign selection on the J-aggregates of diprotonated tetrakis-(4-sulfonatophenyl)porphyrin by traces of unidentified chiral contaminants present in the ultra-pure water used as solvent, *Chirality*, 21, 408-412 (2009). [Link](#).
- [61] S. Portal, M. A. Vallvé, **O. Arteaga**, J. Ignés-Mullol, A. Canillas, and E. Bertran. Optical characterization of colloidal crystals based on dissymmetric metal-coated oxide submicrospheres, *Thin Solid Films*, 517, , 1053-1057 (2008). [Link](#).
- [62] **O. Arteaga**, Z. El-Hachemi, and A. Canillas. Application of transmission ellipsometry to the determination of CD spectra of porphyrin J-aggregates solid-state samples, *Phy. Stat. Solid. (a)*, 205, 797-801 (2008). [Link](#).
- [63] Z. El-Hachemi, **O. Arteaga**, A. Canillas, J. Crusats, C. Escudero, R. Kuroda, T. Harada, M. Rosa, and J. M. Ribó. On the mechano-chiral effect of vortical flows on the dichroic spectra of 5-phenyl-10,15,20-tris(4-sulfonatophenyl)porphyrin J-aggregates , *Chem. Eur. J.*, 6438-6443 (2008). [Link](#).
- JOURNAL PUBLICATIONS IN SUBMISSION [64] **O. Arteaga**, R. Ossikovski, E. Kuntman, M. Kuntman, A. Canillas, and E. Garcia-Caurel. Mueller matrix polarimetry on a Young's double slit experiment analogue. *Submitted to Opt. Lett.* (2017).
- [65] R. Ossikovski and **O. Arteaga**. Extended Yehs method for optically active anisotropic layered media. *Submitted to Opt. Lett.* (2017).
- PATENTS [66] **O. Arteaga**, A. Canillas, and J. M. Ribó. Method and system for determining a plurality of elements in a Mueller matrix. *WO/2011/148023*. International Application No.: PCT/ES2011/070373 (2011). [Link](#).
- [67] E. Bertran, A. Canillas, **O. Arteaga**, F. Barroso and E. Jover. System and method for the detection and characterisation of nanoparticles. *WO/2011/076968*. International Application No.: PCT/ES2010/070861 (2011). [Link](#).
- PREPRINTS [68] E. Kuntman, M. A. Kuntman, J. Sancho-Parramon, **O. Arteaga**. Formalism of optical coherency in material media with a quantum mechanical treatment, *arXiv*: 1612.09355 (2016). [Link](#). Submitted to Phys. Rev. A
- [69] **O. Arteaga**. A note on optical activity and extrinsic chirality, *arXiv*: 1508.02422 (2015). [Link](#)
- FELLOWSHIPS Marie Curie International Incoming Fellowships (IIF).
 - European Commission. PIIF-GA-2012-330513, [Nanochirality](#), 2014–2016.
Postdoctoral Research Fellowship “Beatriu de Pinós”.
 - Catalan Government. BP-DGR 2011, 2013–2014.
Doctoral research Fellowship “Formación Profesorado Universitario (FPU)”.
 - Spanish Education and Research State Department. AP2006-0019, 2007–2010.
Research Fellowship linked to the Investigation Project LASERPOM (Low-Cost Laser Powermeter With Ultra-Fast Response For Continuous On-Line Monitoring Of Laser Beam Power And Polarisation).
 - [Department of Applied Physics and Optics](#). Universitat de Barcelona, 2005–2006.

Departmental collaboration fellowship during the last year of degree.

- Spanish Education and Research State Department. [Department of Applied Physics and Optics](#). Universitat de Barcelona, 2005.

SHORT RESEARCH STAYS [Oak Ridge National Laboratory](#), Division of Materials Science and Engineering.

- October-December 2008, Oak Ridge, USA.
- In the group of Prof. Gerald E. Jellison, Jr.
- ◊ *Characterization of optically active crystals with generalized ellipsometry and development of instrumentation for Mueller matrix polarimetry.*

TEACHING

2016/2017, Universitat de Barcelona.

- Problemes de Fonaments d'Electromagnetisme i Òptica, Grau d'Enginyeria Química, 15H
- Problemes de Fonaments d'Electromagnetisme i Òptica, Grau de Física, 15H
- Fonaments de Laboratori, Grau de Física, 24H
- Laboratori de Física de Materials, Grau de Física, 12H
- Treball de Grau, Grau de Física, 4H

2014/2015, Universitat de Barcelona.

- Laboratori de Física de Materials, Grau de Física, 24H
- Treball de Grau, Grau de Física, 4H

2013/2014, Universitat de Barcelona.

- Laboratori de Física de Materials, Grau de Física, 24H
- Treball de Grau, Grau de Física, 4H

2012/2013, Universitat de Barcelona.

- Laboratori de Física de Materials, Grau de Física, 12H

STUDENT ADVISING

Ertan Kuntman.

Phd student in Physics. Analysis of biological structures by Mueller matrix polarimetry. 2014–present.

I directed his Master's Thesis and I am directing his PhD Thesis.

David Ramos.

Graduate student in Physics. Spectroscopic mapping polarimetry in Bragg microcavities. 2016–2017.

I directed his Bachelor's Degree Final project.

Alex Cebrián.

Graduate student in Physics. Measurement and analysis of thin films by Mueller matrix ellipsometry. 2014–2015.

I directed his Bachelor's Degree Final project.

Andrea Buono.

Graduate student in Physics. Use of optical polarimetry theory tools in radar polarimetry. 2015.

I supervised and hosted him as a visiting student.

Marta Baldrís.

Graduate student in Physics. Development of a Mueller matrix microscope. 2013–2014.

I directed her Bachelor's Degree Final project.

Shane Nichols.

Graduate student in Chemistry. Development of the Mueller matrix instrumentation and Mueller matrix fluorescence. 2011–2012.

I co-directed his Master's Thesis.

PARTICIPATION IN RESEARCH PROJECTS “TWISTed photons NETwork (TWIST4NET)”

- Construction de l'Espace Européen de la Recherche (ANR-16-MRSE-0003) .
- PI: Oriol Arteaga.

“Ajuts per impulsar la participació en projectes internacionals de recerca”

- Modalitat A. Ajuts per a projectes de IERC: Starting Grants 2016
- PI: Oriol Arteaga.

“Skiron: a beamline for advanced chiroptical spectroscopies ”

- Proposal for phase-III beamlines at Alba Synchrotron (2014–2015).
- PI: Salvador Ferrer.
- Proposal approved, pending execution.

“Modelos químicos para el origen de la homquiralidad biológica: una aproximación integrada teórica y experimental ”

- Spanish national program of fundamental research projects (2014–2017).
- PI: Alberto Moyano.
- Departments of Organic Chemistry and Applied Physics and Optics. Universitat de Barcelona.

“GOALI: Chiroptical spectroscopy”.

- NSF-sponsored Grant Opportunity for Academic Liason with Industry (2011–2013).
- PI: Bart Kahr
- Kahr Group, Department of Chemistry. New York University.

“Experimental and theoretical models for the abiotic emergence of chirality and its detection as the signature for evolutive systems in extraterrestrial materials”

- Spanish national program of fundamental research projects (2009–2012).
- PI: Alberto Moyano.
- Departments of Organic Chemistry and Applied Physics and Optics. Universitat de Barcelona.

“Mirror symmetry breaking processes and their relationship with the abiotic emergence of homochirality (ABIHOM)”

- Spanish national program of fundamental research projects (2006–2009).
- PI: Josep Maria Ribó.
- Departments of Organic Chemistry and Applied Physics and Optics. Universitat de Barcelona.

“Detection of nanometric particle by phase modulated polarimetry (NANOPO-LAR)”.

- Spanish national program of fundamental research projects (2006–2009).
- PI: Enric Bertran.
- Department of Applied Physics and Optics. Universitat de Barcelona. 2006–2009

“Low cost laser powermeter with ultra-fast response for continuous on-line monitoring of laser beam power and polarisation (LASERPOM)”.

- Spanish national program of fundamental research projects (2004–2006).
- PI: Enric Bertran.
- Department of Applied Physics and Optics. Universitat de Barcelona.

HIGHLIGHTED
CONFERENCE OR
SEMINAR
CONTRIBUTIONS

European workshop on Biophotonics and Optical Angular Momentum

- 14–15 November 2016, Palaiseau, France.
- Presentation: “Polarimetric imaging in chiral media”.

7th International Conference on Spectroscopic Ellipsometry

- 6–10 June 2016, Berlin, Germany.
- Presentation: “Dielectric tensor of monoclinic anthracene determined by Mueller matrix ellipsometry”.

EMRS Spring Meeting

- 23–28 May 2015, Lille, France.
- Presentation: “Mueller matrix ellipsometry on the light reflected from a naturally optical active crystal”.

9th Workshop Ellipsometry

- 23–28 February 2015, Enschede, Netherlands .
- Presentation: “Mueller matrix ellipsometry, a tutorial”.

23th International Commission for Optics

- 1–3 September 2014, Santiago de Compostela, Spain.
- Presentation: “Beyond polarization microscopy: Mueller matrix microscopy”.

6th International Conference on Spectroscopic Ellipsometry

- 26–31 May 2013, Kyoto, Japan.
- Presentation: “Useful Mueller matrix symmetries for ellipsometry”.

ICMAB Workshop on Optical Characterization

- 5 Nov 2012, Bellaterra, Spain.
- Presentation: “Polarimetry of anisotropic chiral media”.

MDI seminar, New York University

- 1 June 2010, New York, USA.
- Presentation: “Mueller Matrix Polarimetry for the Study of Chiral Media”.

5th International Conference on Spectroscopic Ellipsometry

- 23–28 May 2010, Albany, USA.
- Presentation: “Transmission Mueller Matrix Ellipsometry of Chirality Switching Phenomena”.

1st Nanocharm Workshop on Advanced Polarimetric Instrumentation

- 7–9 December 2009, Paris, France.
- Presentation: “Measurement of the optical activity in anisotropic samples by transmission Mueller matrix ellipsometry”.

Current trends and advanced ellipsometric and XRD techniques for the characterization of nanostructured materials

- 25-26 June 2009, Bucharest, Romania.
- Presentation: “Analysis of 2D SiO₂ nanoparticle arrays by two-modulator generalized ellipsometry”.

REFEREE SERVICE

- *Optics Letters*
- *Optics Express*
- *Optics Material Express*
- *Applied Optics*
- *Journals of the Optical Society of America A and B*
- *Journal of the American Chemical Society*
- *Optics Communications*
- *Thin Solid Films*
- *Journal Biomedical Optics*
- *Laser and Photonics Reviews*
- *Optics and Laser Technology*
- *Optical Engineering*
- *Advances in Optics and Photonics*

HARDWARE AND

Instrumentation development

SOFTWARE SKILLS

- Design and construction of polarization measurement instruments for spectroscopy (polarimeters, ellipsometers, fluorimeters and circular dichrographs).
- Expertise in polarization modulation techniques combined with Fourier transform analysis.
- Control and data acquisition hardware and software: [Spectrum](#), [National Instruments](#), [Hinds Instruments](#).

Computer Programming:

- C, C++, Labview, MATLAB, Fortran, SQL, MySQL, Mathematica

Productivity Applications:

- \TeX (\LaTeX , \BibTeX), most common productivity packages (for Windows, OS X, and Linux platforms)

Operating Systems:

- Microsoft Windows family, Apple OS X, Linux

LANGUAGES

- Spanish and Catalan as mother tongues
- Spoken and written English (advanced level)
- Spoken and written French (medium level)

AWARDS

“Paul Drude Award”

- In the 7th International Conference on Spectroscopic Ellipsometry (ICSE-7) (2016), Berlin, Germany
- The Paul Drude Award is given at each International Conference of Spectroscopic Ellipsometry (ICSE) to a young scientist for exceptional contributions to the development and application of spectroscopic ellipsometry.

“RD 100 Award to the 150XT Mueller Polarimeter”

- By the RD Magazine (2013), USA

Distinguished OSA reviewer

- By the Optical Society of America. Years 2014, 2015 and 2016.

Second prize of the “16th Doctor’s Senate Award”

- To the thesis *Mueller matrix polarimetry of anisotropic chiral media*
- By the University of Barcelona, 2013

“Extraordinary Award of the PhD”

- By the Physics faculty, University of Barcelona
- Selected among the PhD dissertations presented in the two-year period 2010–2011

Second Prize “Jordi Porta i Jué” 2005

- By the Institute of Catalan Studies
- To the research work: “Cavendish and the measurement of the G constant”