

MARGHERITA ZAVELANI ROSSI

CURRICULUM VITAE ET STUDIORUM

Milano, 4th February 2019

EDUCATION AND SCIENTIFIC CAREER

- ✧ 12th April 2017: Abilitazione Scientifica Nazionale I Fascia Settore Concorsuale 02/B Fisica Sperimentale della Materia
- ✧ From January 2016: Professore Associato (Associate Professor) Dipartimento di Energia of the Politecnico di Milano;
- ✧ from 1st September 2001 to December 2015: Ricercatore (Assistant Professor) Dipartimento di Fisica at the Politecnico di Milano;
- ✧ from 1st February 2000 to 31st August 2001: Fellowship - Assegno di Ricerca at the Physics Department of the Politecnico di Milano;
- ✧ from 1st December 1998 to 31st December 1999: Chercheur Associé at the Centre National de la Recherche Scientifique (C.N.R.S) at the Laboratoire d'Optique Appliquée of the Ecole Polytechnique – Ecole Nationale Supérieure de Techniques Avancées (E.N.S.T.A.) - CNRS (Palaiseau – France);
- ✧ 3rd March 1999: PhD in Physics (Dottorato in Fisica) at the Politecnico di Torino;
- ✧ from 1st November 1995 to 31st October 1998: PhD Student at the Physics Department of the Politecnico di Milano;
- ✧ 25th July 1995: MSc Degree in Electronic Engineering (Laurea in Ingegneria Elettronica) at the Politecnico di Milano;

MATERNITY LEAVES

From 11/01/2002 to 25/07/2002 and from 27/08/2007 to 06/01/2008.

CITATION METRICS (from SCOPUS, 04/02/2019)

- h index: 31
- total citations: 2513
- by 2027 documents
- total citations without self-citations: 2013
- included in Top Italian Scientist list

Articles :82

Book chapter: 3

International patent : 1

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ResearcherID: H-2121-2012

TEACHING ACTIVITY

Margherita Zavelani-Rossi has been teaching at the Politecnico di Milano, giving 19 full lecture courses, 11 exercise courses, 6 courses of laboratory exercise and many thematic lectures.

She has been supervisor or co-supervisors of 3 PhD and 11 MSc theses at the Dipartimento di Fisica of the Politecnico di Milano.

COURSES

- From 2017/2018 “*High Intensity Lasers for Nuclear and Physical Applications*” (10 credits) for the Master Degree in the School/Faculty of Industrial and Information Engineering
- From 2016/2017 to 2017/2018 “*Fondamenti di Fisica Sperimentale*” (12 credits) for the School/Faculty of Industrial and Information Engineering (2 course)
- from 2014/2015 to 2105/2016 “*Fisica*” (“*Physics*”) (14 credits) for the School/Faculty of Civil, Environmental and Land Management Engineering (2 course)
- from 2003/2004 to 2013/2014 “*Fisica Sperimentale*” (“*Experimental Physics*”) (10 credits) for the School/Faculty of Civil, Environmental and Land Management Engineering (11 courses);
- in 2008/2009 “*Fisica Sperimentale A*” (“*Experimental Physics A*”) (5 credits) for the School/Faculty of Chemical Engineering and Engineering of Materials and of Nanotechnologies (1 course);
- from 2001/2002 to 2002/2003 “*Fisica Sperimentale I*” (“*Experimental Physics I*”) (7,5 credits) for the School/Faculty of Informatics Engineering (2 courses);
- in 2000/2001 “*Fisica Sperimentale A+B*” (“*Experimental Physics A+B*”)(10 credits) for the Schools/Faculties of Mechanical Engineering and Energetic Engineering (1 course).

MAIN THEMATIC LECTURES

- in 2013, 2015 and 2018 “*Organic lasers*” for the “Advanced Course on Organic Electronics” for PhD students at the Politecnico di Milano.
- in 2008/2009, “*Scanning near field optical microscopy SNOM for material characterization*” for PhD students in Materials Engineering at the Politecnico di Milano.
- in 2004/2005 “*Laser a materiali organici*” (“*Organic lasers*”) for PhD students of Material Science Engineering at the Università degli Studi di Milano-Bicocca;
- 2006 “*Imaging Second Harmonic Generation by single gold nanoparticles with a SNOM*” at the Laboratoire de Nanotechnologie et d’Instrumentation Optique dell’Université de Technologie de Troyes, France;
- 2005 “*Femtosecond high-brightness nanometer-sized coherent light sources*” at the Max-Planck-Institut für Biochemie, Munich, Germany;
- 2003 “*Organic lasers*” at the International School on Molecules in Nano Channels, Cagliari Italy;
- 1999 “*Generation of picosecond pulses by solid state lasers: neodymium in matrix and conjugated polymers*” at the Laboratoire d’Optique Appliquée, Ecole Polytechnique - Ecole Nationale Supérieure de Techniques Avancées, Parigi, France.

RESEARCH PROJECTS

- ✧ PHC PROCOPE phase II - Partenariat Hubert Curien (PHC) franco-allemande (Deutscher Akademischer Austausch Dienst (DAAD) and Ministère de l'Europe et des Affaires étrangères (MEAE) et Ministère de l'Enseignement supérieur, de la Recherche et de l'Innovation (MESRI)) – Non-linear Nano-Antennas (NOLINA) – 2018 –12 months – Italian Coordinator.
- ✧ MIUR-PRIN 2015 (PE - Physical Sciences and Engineering) “Hot-electrons in self-organised plasmonic metasurfaces coupled to semiconducting MoS₂ nanosheets: Photon harvesting in 2D materials (HotPlasMoS₂)” (2015WTW7J3) -36 months- Unit Coordinator.
- ✧ European Cooperation in Science and Technology COST action MP 1302 NanoSpectroscopy -48 months (2013-2017) – participant – Management Committee substitute for Italy.
- ✧ Fondazione Cariplo 2012- “Micro-laser based on rod-shaped self-assembling colloidal semiconductor nanocrystals (NANOCRYSLAS)” (2012-0824) 248000 € - 36 months – Coordinator.
- ✧ Politecnico di Milano - Progetto Giovani Ricercatori 2001 “Laser action in oligo-thiophene films” - 12 months - Coordinator.
- ✧ Participant to many European and National projects.

SCIENTIFIC RESPONSIBILITIES

- Member of Program Committee of the European Optical Society Annual Meeting EOSAM 2012, 2014, 2016 for the Topical Meeting TOM 5 “*Organic Photonics & Electronics*” in 2012 TOM 7 “*Energy Harvesting and Organic Photonics*” in 2014 and TOM 7 “*Organic & Hybrid Semiconductor Materials and Devices*” in 2016 and 2018.
- Member of the Organizing Committee of the “*Third Annual Conference on Optical Nanospectroscopy*” of the COST action MP 1302 NanoSpectroscopy, in 2016
- Referee for several international peer-referred journals including: ACS Nano, Advanced Optical Materials, Nanoscale, The Journal of Physical Chemistry Letters, Optics Express, Applied Physics Letters, Applied Physics B, Journal of Materials Chemistry C, Semiconductor Science and Technology, Journal of Nanomaterials, Journal of Polymer Science, Journal of Physics D.

RESEARCH ACTIVITY

The main scientific activities have dealt with generation and application of ultrashort laser pulses. In particular: (i) study and development of picosecond and femtosecond laser systems, (ii) ultrafast spectroscopy of organic and inorganic materials, (iii) investigation and development of organic and nanocrystal lasers, (iv) microscopy with high temporal and spatial resolution. The activity has been carried on in Italy and abroad, in collaboration with Italian and foreign research groups.

The results have received significant international recognition as proven by the articles published in peer reviewed journals, by invited and contributed papers in international conferences, by contributions in international books and by an international patent. The interest and the diffusion of the results are mainly demonstrated by the citations of these papers. In the following there is a description of the content and the achievements of the research activity (citations from SCOPUS, 24/06/2015).

GENERATION OF SHORT LASER PULSES

Different methods and techniques have been developed and exploited to produce short laser pulses. A novel mode locking regime for the generation of picosecond pulses has been obtained with an innovative technique, which exploits the cascading of second order nonlinearities to obtain a third order (Kerr) effect. A regenerative amplifier for a laser system working at a repetition rate of 100 Hz has been developed during the post-Doc activity in France, with particular attention to thermal problems. It was a part of a system delivering high energy laser pulses. Broadband pulses have been generated by parametric amplification and temporal compression has been achieved by chirped mirrors designed ad hoc, in collaboration with the group of Prof. U. Keller and G. Steinmeyer at ETH Zurich; 6-fs pulses in the visible have thus been demonstrated. These light sources have also been used for various experiments in the field of ultrafast optics.

On this subject 11 articles have been published with total 358 citations. The most cited paper (102 citations) is: M. Zavelani-Rossi, et al., *Opt. Lett.* 26, 1155 (2001) (work in collaboration with the group of Prof. U. Keller and G. Steinmeyer at ETH Zurich), and 1 invited presentation has been given at an international conference.

ULTRAFAST SPECTROSCOPY

a) Development of various experimental setups for time-resolved measurements. A number of different experimental techniques have been employed for the investigation of ultrafast processes in matter, in particular: pump-probe, up-conversion and three pulse scattering, all with femtosecond time resolution.

b) Study of photophysical processes in new materials. Organic compounds (as polyfluorenes and thiophenes) and semiconductor colloidal nanocrystals (NCs) (as CdSe, CdSe/CdS, PbS/CdS dots and rods) have been mainly investigated. Organic materials are particularly interesting due to the low cost and easy processing, the emission tunability achievable over a wide range by chemical tailoring, and the prospects in plastic optoelectronics. Semiconductor NCs are attracting increasing attention for photonic applications due to their easy fabrication, their optical properties and for the possibility to control their electronic level structure by changing their composition, size and shape. In the study of these materials main attention has been paid to emitting properties (band of emission, cross section of stimulated emission, upper laser level lifetime...) for application in new plastic or micro laser devices, and also for photonic and photovoltaic systems. Results have been discussed with chemists for the synthesis of new materials.

In this contest 38 articles have been published which obtained in total more than 730 citations.

NEW LASER WITH ORGANIC OR NCs ACTIVE MEDIA

The study and development of laser with new active media (organic materials and NCs) is being carried on from many years now. The first experiments have been carried out with organics and they were primarily intended to prove the possibility to obtain laser action from conjugated polymers and thiophenes. Capabilities and potentialities of these materials have been carefully investigated. Further experiments have been focused on the study of the laser cavities for these materials (distributed feedback resonators, microcavities and all-polymer resonators) and on the emission characteristics (time behaviour, divergence, stability) retrieving key information on the laser dynamics and on feedback mechanisms. A similar approach has been used with NCs. After assessing their gain properties, we obtained micro-resonators, composed of only NCs, by simple self assembling following the deposition of NC solution and solvent evaporation. Such devices show laser emission upon optical excitation. The fabrication of the micro-laser, the emitting properties and the feedback mechanisms have been studied and optimized.

New organic and NC lasers have been demonstrated, with different materials and resonators. In particular picosecond laser emission has been obtained for the first time in the blue spectral region; this result has been highlighted in the "Newsbreaks" of *Laser Focus World* **35**, 9 (1999). 18 articles have been published and more than 410 citations gained and 1 invited presentation has been given at an international conference

SCATTERING NEAR FIELD OPTICAL and CONFOCAL MICROSCOPY

The last activity is in the framework of near-field scanning microscopy (SNOM) and confocal microscopy, coupled to time resolved experimental techniques. A new SNOM system has been developed. It couples femtosecond laser pulses to a hollow pyramid SNOM tip allowing to achieve high spatial (< 100 nm) and temporal (~30 fs) resolution in the near-field. This SNOM has been used for the study of nonlinear phenomena and plasmon resonances of single metal nanoparticles and for study on polymers with one and two-photon excitation. A confocal microscope has also been developed and coupled to the femtosecond spectroscopy systems to perform ultrafast experiments with high temporal and spatial resolution (100-fs, 1- μ m). This apparatus has been used to investigate the properties and the behaviour of charges in organic devices.

In this field 12 articles have been published with more than 190 citations, and 6 invited presentations at international conferences have been given.

INVITED CONTRIBUTIONS IN INTERNATIONAL CONFERENCES

1. M. Zavelani-Rossi "Ultrafast exciton dynamics in PbS/CdS and CdSe/CdS nanocrystals and in coupled nanoparticle systems" (Paper number in program ICACC-S17-015-2019) 43rd International Conference on Advanced Ceramics and Composites (ICACC 2019), Daytona Beach (Florida, U.S.A.) 27th January-1st February 2019
2. G. Della Valle, F. Scotognella, M. Zavelani-Rossi, S. Longhi, L. Manna, G. Lanzani, P. Laporta, F. Tassone, "Nonlinear Plasmonics in Heavily Doped Semiconductor Nanoparticles" 6th International Conference on Optical, Optoelectronic and Photonic Materials and Applications ICOOPMA14, 27 luglio-1 agosto 2014
3. R. Krahne, M. Zavelani-Rossi, A. Giugni, F. Tassone, G. Lanzani, L. Manna, E. Di Fabrizio, "*Semiconductor core-shell nanorods: Amplified spontaneous emission, gain, lasing, and crystal vibrations*" XI International Conference on Nanostructured Materials (NANO 2012), Rhodes (Greece), 26-31 August 2012.
4. M. Finazzi, P. Biagioni, M. Celebrano, M. Zavelani-Rossi, D. Polli, M. Labardi, M. Allegrini, J. Grand, P. –M. Adam, L. Duò, and G. Cerullo, "*Selection rules for second harmonic generation from metal nanoparticles: theory and experiment*" International Conference on Near-field Optics NFO10, Buenos Aires (Argentina), September 2008 (keynote).
5. G. Cerullo, M. Celebrano, M. Zavelani-Rossi, P. Biagioni, M. Finazzi, and L. Duo', "*Near-field second harmonic generation from single gold nanoparticles*", 71th Annual Meeting of the German Physical Society, Regensburg (Germany), March 2007.
6. M. Celebrano, M. Zavelani-Rossi, P. Biagioni, D. Polli, M. Finazzi, L. Duò, G. Cerullo, M. Labardi, M. Allegrini, J. Grand, P. Royer, P.-M. Adam, "*Mapping local field distribution at metal nanostructures by near-field second-harmonic generation*" SPIE Optics+Photonics 2007, San Diego, California (U.S.A.), 26-30 August 2007
7. O. Svelto, M. Zavelani-Rossi, D. Polli, G. Cerullo, S. De Silvestri, M. Labardi, M. Allegrini, "*Femtosecond High-Brightness Nanometer-Sized Coherent Light Source*", Advanced Solid-State Photonics 2005, Wien (Austria), 6-9 February 2005.
8. M. Labardi, M. Zavelani-Rossi, D. Polli, G. Cerullo, M. Allegrini, S. De Silvestri, O. Svelto, "*Femtosecond Nano-Optics*", 13th International Laser Physics Workshop, Trieste (Italy), 12-16 July 2004.
9. M. Labardi, M. Zavelani-Rossi, D. Polli, G. Cerullo, M. Allegrini, S. De Silvestri, O. Svelto, "*Novel femtosecond light nanosources for near-field microscopy applications*", European Materials Research Society – Spring Meeting 2004, Strasbourg (France), 24-28 May 2004.
10. G. Cerullo, C. Manzoni, D. Polli, M. Zavelani-Rossi, S. De Silvestri, "*Ultra-broadband parametric amplification*", Advanced Solid-State Photonics 2004, Santa Fé (U.S.A.), February 2004.

CHAPTERS IN INTERNATIONAL BOOKS

1. M. Carvelli, G. Lanzani, S. Perissinotto, M. Zavelani–Rossi, G. Gigli, M. Salerno, L. Troisi, “*Ultrafast photonics in polymer nanostructures*”, in *Ultrafast Dynamics and Laser Action of Organic Semiconductors*, Ed by Z.V. Vardeny, Taylor & Francis, Boca Raton, FL CRC Press, chap. 6, pag 251-310 (2009) .ISBN: 978-1-4200-7281-5, DOI: 10.1201/9781420072822.ch6
2. G. Lanzani, G. Cerullo, D. Polli, A. Gambetta, M. Zavelani-Rossi, C. Gadermaier. “*Ultrafast Photophysics in Conjugated Polymers*”, *Physics of Organic Semiconductors*, Ed. by W. Brütting, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, FRG, pag 129-151, (2006). ISBN 9783527405503, DOI 10.1002/3527606637.ch5
3. C. Gadermaier, L. Lüer, A. Gambetta, T. Virgili, M. Zavelani-Rossi, and G. Lanzani, “*Photophysics in Semiconducting Polymers: The Case of Polyfluorenes*” in *Semiconducting Polymers, Chemistry, Physics and Engineering*, Ed. by G. Hadziioannou, and G.G. Malliaras, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, pag. 205-234 (2006) ISBN 978-3-527-31271-9
- 4.

INTERNATIONAL PATENTS

1. R. Krahné, L. Manna, M. Zavelani-Rossi, G. Lanzani, S. Girardo, D. Pisignano, M. G. Lupo, “*Fabrication of lasing microcavities consisting of highly luminescent colloidal nanocrystals*” United States Patent, Application number: US 13/021,221, Publication number: US20120201265 A1, Patent number: US 8,259,772 B2, 4 September. 2012

ARTICLES IN INTERNATIONAL JOURNALS

1. C. Capitani, V. Pinchetti, G. Gariano, B. Santiago-González, C. Santambrogio, M. Campione, M. Prato, R. Brescia, A. Camellini, F. Bellato, F. Carulli, A. Anand M. Zavelani-Rossi, F. Meinardi, S. A. Crooker, S. Brovelli
“*Quantized Electronic Doping towards Atomically Controlled “Charge-Engineered” Semiconductor Nanocrystals*”
Nano Lett. (2019) DOI 10.1021/acs.nanolett.8b04904
2. A. Camellini, C. Mennucci, E. Cinquanta, C. Martella, A. Mazzanti, A. Lamperti, A. Molle, F. Buatier de Mongeot, G. Della Valle, M. Zavelani-Rossi,
“*Ultrafast Anisotropic Exciton Dynamics in Nanopatterned MoS₂ Sheets*”,
ACS Photonics (2018) DOI: 10.1021/acsp Photonics.8b00621
3. V. Pinchetti, Q. Di, M. Lorenzon, A. Camellini, M. Fasoli, M. Zavelani-Rossi, F. Meinardi, J. Zhang, S. A. Crooker and S. Brovelli
“*Excitonic pathway to photoinduced magnetism in colloidal nanocrystals with nonmagnetic dopants*”
Nature Nanotechnology 13 (2) pag 145-151 (2018) <https://doi.org/10.1038/s41565-017-0024-8>
4. G. Sirigu, A. Camellini, H. Zhao, L. Jin, F. Rosei, A. Vomiero, and M. Zavelani-Rossi,

“Dual emission and optical gain in PbS/CdS nanocrystals: Role of shell volume and of core/shell interface”

Phys. Rev. B 96, 155303 (2017) DOI: 10.1103/PhysRevB.96.155303

5. Y. Zhou, M. Celikin, A. Camellini, G. Sirigu, X. Tong, L. Jin, K. Basu, X. Tong, D. Barba, D. Ma, S. Sun, F. Vidal, M. Zavelani-Rossi, Z.M. Wang, H. Zhao, A. Vomiero, F. Rosei *“Ultrasml Nanoplatelets: The Ultimate Tuning of Optoelectronic Properties”*
Advanced Energy Materials 1602728 1-8 (2017) DOI: 10.1002/aenm.201602728
6. C. Urso, M. Barawi, R. Gaspari, G. Sirigu, I. Kriegel, M. Zavelani-Rossi, F. Scotognella, M. Manca, M. Prato, L. De Trizio, and L. Manna,
“Colloidal Synthesis of Bipolar Off-Stoichiometric Gallium Iron Oxide Spinel-Type Nanocrystals with Near-IR Plasmon Resonance”
J. Am. Chem. Soc 139(3), pp. 1198-1206 (2017) DOI: 10.1021/jacs.6b11063
7. L. Jin, G. Sirigu, X. Tong, A.a Camellini, A. Parisini, G. Nicotra, C. Spinella, H. Zhao, S. Sun, V. Morandi, M. Zavelani-Rossi, F. Rosei, A. Vomiero *“Engineering interfacial structure in “Giant” PbS/CdS quantum dots for photoelectrochemical solar energy conversion”*
Nano Energy accepted DOI: 10.1016/j.nanoen.2016.10.029
8. V. Pinchetti, F. Meinardi, A. Camellini, G. Sirigu, S. Christodoulou, W. K. Bae, F. De Donato, L. Manna, M. Zavelani-Rossi, I. Moreels, V. I. Klimov, and S. Brovelli
“Effect of Core/Shell Interface on Carrier Dynamics and Optical Gain Properties of Dual-Color Emitting CdSe/CdS Nanocrystals”
ACS Nano 10, 6877-6887 (2016) DOI: 10.1021/acs.nano.6b02635
9. Haiguang Zhao, Gianluca Sirigu, Andrea Parisini, Andrea Camellini, Giuseppe Nicotra, Federico Rosei, Vittorio Morandi, Margherita Zavelani-Rossi and Alberto Vomiero
“Dual emission in asymmetric “giant” PbS/CdS/CdS core/shell/shell quantum dots”
Nanoscale 8, 4217-4226 (2016) DOI: 10.1039/C5NR08881J
10. I. Concina, C. Manzoni, G. Grancini, M. Celikin, A. Soudi, F. Rosei, M. Zavelani-Rossi, G. Cerullo, A. Vomiero
“Modulating exciton dynamics in composite nanocrystals for excitonic solar cells”
J. Phys. Chem. Lett 6, 2489-2495 (2015) DOI: 10.1021/acs.jpcllett.5b00765
11. M. Zavelani-Rossi, D. Polli, S. Kochtcheev, A.-L. Baudrion, J. Béal, V. Kumar, E. Molotokaite, M. Marangoni, S. Longhi, G. Cerullo, P.-M. Adam, and G. Della Valle
“Transient Optical Response of a Single Gold Nanoantenna: The Role of Plasmon Detuning”
ACS Photonics 2, 521-529 (2015) DOI: 10.1021/ph5004175
12. G. Canazza, F. Scotognella, G. Lanzani, S. De Silvestri, M. Zavelani-Rossi, D. Comoretto
“Lasing from all-polymer microcavities”
Laser Phys. Lett. 11, 035804 1-7 (2014) DOI: 10.1088/1612-2011/11/3/035804
13. G. Della Valle, F. Scotognella, , A.R. Srimath Kandada, M. Zavelani-Rossi, H. Li, M. Conforti, S. Longhi, I. G. Lanzani and F. Tassone,
“Ultrafast Optical Mapping of Nonlinear Plasmon Dynamics in Cu_{2-x}Se Nanoparticles”,
J. Phys. Chem. Lett. 4, 3337-3344 (2013) DOI: dx.doi.org/10.1021/jz401862v
14. F. Scotognella, G. Della Valle, A.R. Srimath Kandada, M. Zavelani-Rossi, S. Longhi, I. G. Lanzani and F. Tassone,
“Plasmonics in heavily-doped semiconductor nanocrystals”,

- Eur. Phys. J. B 86, 154 (1-13), (2013) DOI: 10.1140/epjb/e2013-40039-x
15. M. Zavelani-Rossi, R. Krahne, G. Della Valle, S. Longhi, I. R. Franchini, S. Girardo, F. Scotognella, D. Pisignano, L. Manna, G. Lanzani and F. Tassone,
"Self-assembled CdSe/CdS nanorod micro-lasers fabricated from solution by capillary jet deposition",
Laser & Photonics Reviews 6, n. 5, 678-683, (2012) DOI: 10.1002/lpor.201200010
 16. F. Scotognella, G. Lanzani, L. Manna, F. Tassone, and M. Zavelani-Rossi,
"Study of higher-energy core states in CdSe/CdS octapod nanocrystals by ultrafast spectroscopy"
Eur. Phys. J. B vol 85, 128 1-5, (2012) DOI: 10.1140/epjb/e2012-20867-x
 17. M. G. Lupo, F. Scotognella, M. Zavelani-Rossi, G. Lanzani, L. Manna and F. Tassone,
"Band-edge ultrafast pump-probe spectroscopy of core/shell CdSe/CdS rods: assessing electron delocalization by effective mass calculations"
Physical Chemistry Chemical Physics, vol 14, 7420-7426, (2012). DOI: 10.1039/c2cp40439g
 18. C. Sciascia, N. Martino, T. Schuettfort, B. Watts, G. Grancini, M. R. Antognazza, M. Zavelani-Rossi, C. R. McNeill, and M. Caironi
"Sub-micrometer charge modulation microscopy of a high mobility polymeric n-channel field-effect transistor"
Adv. Mater 23, vol 43, 5086-5090 (2011) DOI: 10.1002/adma.201102410
 19. F. Scotognella, G. Della Valle, A. R. Srimath Kandada, D. Dorfs, M. Zavelani-Rossi, M. Conforti, K. Miszta, A. Comin, K. Zorobchevskaya, G. Lanzani, L. Manna, F. Tassone
"Plasmon dynamics in colloidal Cu_{2-x}Se nanocrystals",
Nano Letters 11, Issue 11, 4711-4717 (2011) DOI: 10.1021/nl202390s
 20. F. Scotognella, K. Miszta, D. Dorfs, M. Zavelani-Rossi, R. Brescia, S. Marras, L. Manna, G. Lanzani, F. Tassone
"Ultrafast Exciton Dynamics in Colloidal CdSe/CdS Octapod Shaped Nanocrystals",
Journal of Physical Chemistry C 115, 9005-9011 (2011). DOI: 10.1021/jp203000n
 21. F. Scotognella, D. P. Puzzo, M. Zavelani-Rossi, J. Clark, M. Sebastian, G. A. Ozin, G. Lanzani,
"Two-photon Poly(phenylenevinylene) DFB Laser",
Chemistry of Materials, 23(3), 805-809 (2011). DOI: 10.1021/cm102102w
 22. R. Krahne, M. Zavelani-Rossi, M. G. Lupo, L. Manna and G. Lanzani,
"Amplified spontaneous emission from core and shell transitions in CdSe/CdS nanorods fabricated by seeded growth",
Appl. Phys. Lett. 98, 063105 (2011) DOI: 10.1063/1.3549298
 23. M.R. Antognazza, F. Scotognella, K. Miszta, D. Dorfs, M. Zanella, M. Zavelani-Rossi, L. Manna, G. Lanzani and F. Tassone ,
"Steady-state photoinduced absorption of CdSe/CdS octapod shaped nanocrystals",
Phys. Chem. Chem. Phys. 13, 15326-15330 (2011). DOI: 10.1039/c1cp21402k
 24. M. Zavelani-Rossi, M. G. Lupo, F. Tassone, L. Manna and G. Lanzani,
"Suppression of Biexciton Auger Recombination in CdSe/CdS Dot/Rods: Role of the Electronic Structure in the Carrier Dynamics",
Nano Lett. 10, 3142-3150 (2010). DOI 10.1021/nl101930z
 25. M. Zavelani-Rossi, M.G. Lupo, R. Krahne, L. Manna, G. Lanzani;
"Lasing in self assembled microcavities of CdSe/CdS core/shell colloidal quantum rods",
Nanoscale 2, 931-935 (2010). DOI 10.1039/b9nr00434c

26. M.G. Lupo, M. Zavelani-Rossi, A. Fiore, L. Carbone, D. Polli, R. Cingolani, L. Manna, G. Lanzani, *"Evidence of Electron Wave Function Delocalization in CdSe/CdS Asymmetric Nanocrystals"*, Superlattices and Microstructures 47, 170-173 (2010) DOI: 10.1016/j.spmi.2009.09.006
27. D. P. Puzzo, F. Scotognella, M. Zavelani-Rossi, M. Sebastian, A. J. Lough, I. Manners, G. Lanzani, R. Tubino and G. A. Ozin, *"Distributed Feedback Lasing from a Composite Poly(phenylene vinylene)-Nanoparticle One-Dimensional Photonic Crystal"*, Nano Lett., 9, 4273–4278 (2009) DOI 10.1021/nl902516t
28. M. Celebrano, M. Savoini, P. Biagioni, M. Zavelani-Rossi, P.-M. Adam, L. Duò, G. Cerullo and M. Finazzi, *"Retrieving the complex polarizability of single plasmonic nanoresonators"*, Phys. Rev. B 80, 153407 1-4 (2009). DOI: 10.1103/PhysRevB.80.153407
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