

Giovanna Palermo

Curriculum Vitae et Studiorum

CONTACT

Dr. Giovanna Palermo

Physics Department & CNR-NANOTEC

University of Calabria

I-87036 Rende (CS), Italy

Tel. +39 0984 496152;

Mobile +39 340 3280505

e-mail: giovanna.palermo@fis.unical.it

Orcid: [0000-0001-5649-735X](https://orcid.org/0000-0001-5649-735X);

https://www.researchgate.net/profile/Giovanna_Palermo2

CURRENT POSITION

Post-doc – April 2018 - today: “Study of the optical and thermoplasmonic properties of 3D metamaterials and metallic nanostructures for sensing and bio-medical applications”.

Physics Department - University of Calabria –Rende (CS) – Italy

Supervisor: Prof. A. De Luca

RESEARCH EXPERIENCE

SCIENTIFIC RESEARCH AREAS OF INTEREST

Thermoplasmonics

Switchable / Tunable Photonic systems

Self-assembled nanostructured Materials

Metamaterials

Active Plasmonics

02/2016 – 07/2017

Post Doc in “Study of the thermoplasmonic properties of reconfigurable nanostructured materials”

Physics Department - University of Calabria –Rende (CS) - Italy

Supervisor: Prof. A. De Luca

EDUCATION

11/2012 – 12/2015

PhD in Science and Technologies of molecular materials and mesophases

XXVIII cycle - Phd School “B. Telesio” – Physics Department

University of Calabria –Rende (CS) - Italy

Thesis: “Soft matter for active plasmonics and applications”

Supervisor: Prof. C. Umeton - Vote: Excellent

04/2015 – 05/2015

“Vinci Project” Doctorate school, Universite-franco-italienne

UTT - University of Technology of Troyes, (France)

Courses: a) Nano-fabrication; b) Nano-optics; c) Nano-plasmonics; d) Quantum optics

- 12/2007 – 05/2012 **Master's Degree in Electronic Engineering - Microelectronics**
University of Calabria - Rende (CS) - Italy
Thesis: "Impact of standard and advanced metallization in not conventional solar cell selective emitter"
Supervisor: Prof. F. Crupi - Vote: 107/110
- 09/2004 – 12/2007 **Bachelor's Degree in Electronic Engineering**
University of Calabria - Rende (CS) - Italy
Thesis: "Synchronization in measurement and control systems using the IEEE 1588 protocol" - Supervisor: Prof. D. Grimaldi - Vote: 98/110

AWARDS

Best Poster - NanoPlasm 2018 Conference, award financed by HORIZON 2020: ProseQo awards

TEACHING EXPERIENCE

- 04/2018 – 09/2018 **Physics Department, University of Calabria**
Lecturer - Course: "Geometry"
- 03/2017 – 09/2017 **Physics Department, University of Calabria**
Lecturer - Course: "Geometry"
- 02/2017 – 06/2017 **Progetto Nazionale Lauree Scientifiche – Physics and Material Science**
Organiser/Lecturer
Course: "Nanotechnology – Matter at the nanoscale"
- 03/2016 – 09/2016 **DIMES - Dipartimento di Ingegneria Informatica, Modellistica, Elettronica e Sistemistica, University of Calabria**
Lecturer/Lab assistant - Course: "Optoelectronics"
- 12/2016 – 01/2017 **DINCI - Dipartimento di Ingegneria Civile, University of Calabria**
Lecturer/Tutor - Course: "Linear Algebra and Geometry"
- 11/2015 – 02/2016 **DIMEG - Dipartimento di Ingegneria Meccanica, Energetica e Gestionale, University of Calabria**
Lecturer/Tutor - Course: "Linear Algebra and Geometry"

PUBLICATIONS IN PEER-REVIEWED JOURNALS

- 1) (2018) Liquid Crystals (DOI: 10.1080/02678292.2018.1515370) "Plasmonic Photo-Thermal Effects in presence of a Liquid Crystal Command Layer"
G. Palermo, A. Guglielmelli, L. Pezzi, R. Caputo, L. De Sio, A. De Luca and C. Umeton.
- 2) (2018) Nanoscale **10**, 35, 16556, "Flexible Thermo-plasmonics: an opto-mechanical control of the heat generated at the nanoscale"
G. Palermo, U. Cataldi, A. Condello, R. Caputo, T. Bürgi, C. Umeton, and A. De Luca.
- 3) (2018) RSC Adv., **8**, 16314-16318 "Assessment of EtQxBox complexation in solution by steady-state and time-resolved fluorescence spectroscopy"
A. Aprile, G. Palermo, A. De Luca, R. Pinalli, E. Dalcanale and P. Pagliusi.

- 4) (2018) ACS Photonics, **5** (8), 3399-3407 "Tailoring Electromagnetic Hot Spots toward Visible Frequencies in Ultra-Narrow Gap Al/Al₂O₃ Bowtie Nanoantennas"
D. Simeone, M. Esposito, M. Scuderi, G. Calafiore, G. Palermo, A. De Luca, F. Todisco, D. Sanvitto, G. Nicotra, S. Cabrini, V. Tasco, A. Passaseo, and M. Cuscunà.
- 5) (2018) Optics and Lasers in Engineering **104**, 291-299 "Thue-Morse nanostructures for tunable light extraction in the visible region"
M. Rippa, R. Castagna, A. Marino, V. Tkachenko, G. Palermo, A. Pane, C. Umeton, N. Tabiryman and L. Petti.
- 6) (2017) Nanoscale, **9**(48), 19279-19289 "Plasmon-mediated cancer phototherapy: the combined effect of thermal and photodynamic processes."
L. Ricciardi, L. Sancey, G. Palermo, R. Termine, A. De Luca, E. I. Szerb, I. Aiello, M. Ghedini, G. Strangi, Giuseppe and M. La Deda.
- 7) (2017) The Journal of Physical Chemistry C, **121**(43), 24185-24191 "Thermoplasmonic Effects in Gain-Assisted Nanoparticle Solutions"
G. Palermo, D. Pagnotto, L. Ricciardi, L. Pezzi, M. La Deda, and A. De Luca.
- 8) (2017) Journal of Physics D: Applied Physics, **50** 435302 "Photo-thermal study of a layer of randomly distributed gold nanoparticles: from nano-localization to macro-scale effects"
L. Pezzi, G. Palermo, A. Veltri, U. Cataldi, T. Bürgi, T. Ritacco, M. Giocondo, C. Umeton and A. De Luca.
- 9) (2017) Phot. Lett. Poland **9**, 1, 17, "Control of the optically induced heating of gold nanoparticles"
G. Palermo, R. Caputo, A. De Luca and C. Umeton.
- 10) (2017) ACS Applied Materials & Interfaces **9**, 36, 30951, "A conformal silk-azobenzene composite for optically switchable diffractive structures"
G. Palermo, L. Barberi, G. Perotto, R. Caputo, L. De Sio, C. Umeton and F. Omenetto.
- 11) (2017) Molecular Crystals and Liquid Crystals, **649**:1, 31-37 "Determination of NLC refractive index dispersion in wavelength and temperature for plasmonic applications"
L. Pezzi, G. Palermo, C. Umeton and A. De Luca.
- 12) (2017) Molecular Crystals and Liquid Crystals, **649**:1, 45-49 "Thermo-plasmonic effects on E7 nematic liquid crystal"
G. Palermo, U. Cataldi, L. Pezzi, T. Bürgi, C. Umeton and A. De Luca.
- 13) (2017) Crystals **7**(1), 14 "Photo-Thermal effects in 1D gratings of Gold Nanoparticles"
G. Palermo, T. Ritacco, D. M. Aceti, L. Giocondo and A. De Luca.
- 14) (2016) Applied Physics Letters, 109, 191906 "Optical control of plasmonic heating effects using reversible photo-alignment of nematic liquid crystals"
G. Palermo, U. Cataldi, L. De Sio, T. Bürgi, N. Tabiryman and C. Umeton.
- 15) (2016) Proc. of SPIE OPTO (pp. 97690C-97690C), "Nematic liquid crystals used to control photo-thermal effects in gold nanoparticles"
L. Pezzi; L. De Sio, G. Palermo, A. Veltri, T. Placido, M.L. Curri, N. Tabiryman and C. Umeton.
- 16) (2015) Molecular Crystals and Liquid Crystals, **619**(1), 35-41 "Flexible Structures Based on a Short Pitch Cholesteric Liquid Crystals"
G. Palermo, L. De Sio and C. Umeton.
- 17) (2015) Nanospectroscopy **1**, 1, 40, "Liquid Crystals as Active Medium: Novel Possibilities in Plasmonics"
R. Caputo, G. Palermo, M. Infusino and L. De Sio.

- 18) (2015) *Molecular Crystals and Liquid Crystals*, **614**(1), 93-99 “Plasmonic Thermometer Based on Thermotropic Liquid Crystals”
G. Palermo, L. De Sio, T. Placido, R. Comparelli, M. L. Curri, R. Bartolino and C. Umeton.
- 19) (2015) *Physical Chemistry Chemical Physics*, **17**(31), 20281-20287 “Photo-thermal effects in gold nanoparticles dispersed in thermotropic nematic liquid crystals”
 L. Pezzi, L. De Sio, A. Veltri, T. Placido, G. Palermo, R. Comparelli, M.L. Curri, A. Agostiano, N. Tabiryan and C. Umeton.
- 20) (2015) *Journal of Optics*, **17**(2), 025001 “Templating gold nanorods with liquid crystalline DNA”
 L. De Sio, F. Annesi, T. Placido, R. Comparelli, V. Bruno, A. Pane, G. Palermo, M.L. Curri, C. Umeton, and R. Bartolino.
- 21) (2015) *Displays*, **36**, 21-29 “Developing novel liquid crystal technologies for display and photonic applications”
 H. M. Atkuri, E. S.P. Leong, J. Hwang, G. Palermo, G. Si, J. M. Wong, ... and L. De Sio.
- 22) (2013) *Journal of Materials Chemistry C*, **1**(47), 7798-7802” Electro and pressure tunable cholesteric liquid crystal devices based on ion-implanted flexible substrates”
 L. De Sio, G. Palermo, V. Caligiuri, A. Vasdekis, A. Pane, J. W. Choi, .. and C. Umeton.

BOOK CHAPTERS

- 1) (2015) “Plasmonics: a theoretical background”. In: De Sio Ed. “Active Plasmonic Nanomaterials”, Panstanford.
 L. Pezzi, G. Palermo and C. Umeton
- 2) (2015) “Liquid Crystals Order in Polymeric Microchannels”. In: Thakur, V.K. Ed. “Liquid Crystalline Polymers: Processing and Applications”, (Chapter 1), Springer.
G. Palermo, L. De Sio, R. Caputo, C. Umeton and R. Bartolino

CONFERENCES PARTICIPATION

- (2018) 104° Congresso nazionale di Fisica”, Cosenza (Italy),
Oral: “Flexible Thermo-plasmonics: mechanically actuated control of the photo-induced heat generation”
G. Palermo, U. Cataldi, A. Condello, R. Caputo, T. Burgi, C. Umeton, A. De Luca
- (2018) Plasmonica 2018, Florence (Italy)
Oral: “Flexible Thermo-plasmonics: mechanically actuated control of the photo-induced heat generation”
G. Palermo, U. Cataldi, A. Condello, R. Caputo, T. Burgi, C. Umeton, A. De Luca
- (2018) NANOPLASM 2018, Cetraro (Italy)
Poster: “Flexible thermo-plasmonics: an optomechanical control of the heat generated at the nanoscale”.
G. Palermo, U. Cataldi, A. Condello, R. Caputo, T. Burgi, C. Umeton, A. De Luca
- (2017) Plasmonica 2017, Lecce (Italy)
Poster: “Thermoplasmonic effects in gain-assisted gold nanoparticle solutions”
G. Palermo, D. Pagnotto, L. Ricciardi, L. Pezzi, M. La Deda and A. De Luca

(2017) NOMA 2017, Cetraro (Italy)

Poster: "Thermoplasmonic effects in gain-assisted gold nanoparticle solutions"

G. Palermo, D. Pagnotto, L. Ricciardi, L. Pezzi, M. La Deda and A. De Luca

(2016) NANOPLASM 2016, Cetraro (Italy)

Poster: " Photo-induced temperature variations in a uniform layer of gold nanoparticles: from collective effect down to heating nanolocalization ".

G. Palermo, L. Pezzi, A. Veltri, U. Cataldi, T. Burgi, T. Ritacco, M. Giocondo, C. Umeton and A. De Luca

(2015) NOMA 2015, Cetraro (Italy)

Poster: "Plasmonics and heat"

G. Palermo, L. Pezzi and C. Umeton

(2014) 7° WorkShop Italy-Japan and SICL 2014, Ravenna (Italy)

Oral: "Plasmonic nano-heaters confined in self-organized materials"

G. Palermo, L. De Sio, T. Placido, R. Comparelli, F. Annesi, A. Pane, M.L. Curri, N. Tabiryan, C. Umeton, R. Bartolino, T. Bunning

(2014) NANOPLASM 2014, Cetraro (Italy)

Poster: "Plasmonic nano-heaters confined in self-organized materials"

G. Palermo, L. De Sio, T. Placido, R. Comparelli, F. Annesi, A. Pane, M.L. Curri, N. Tabiryan, C. Umeton, R. Bartolino, T. Bunning

(2013) NOMA 2013, Cetraro (Italy)

Poster: "Pressure Sensitive and electro-responsive optofluidic structures based on a short pitch colesteric liquid crystals"

G. Palermo, L. De Sio, V. Caligiuri, A. E. Vasdekis, A. Pane, J.W. Choi, L. Maffli, M. Niklaus, H. R. Shea, C. Umeton

LANGUAGES

- Italian - native speaker
- English - fluent

REFERENCES

Prof. Cesare Umeton
Dept. Physics
University of Calabria
Ponte P. Bucci cubo31C
87036, Rende CS (Italy)
cesare.umeton@fis.unical.it

Prof. Antonio De Luca
Dept. Physics
University of Calabria
Ponte P. Bucci cubo31C
87036, Rende CS (Italy)
antonio.deluca@fis.unical.it

Dr. Roberto Caputo
Dept. Physics
University of Calabria
Ponte P. Bucci cubo31C
87036, Rende CS (Italy)
roberto.caputo@unical.it