

GIUSEPPE PUCCI

Curriculum Vitae - July 5, 2022

National Research Council of Italy, CNR-Nanotec - Ponte P. Bucci, Cubo 33C, Rende 87036 Italy

giuseppe.pucci@cnr.it \diamond www.gpucci.net

I am a **researcher in physics** in the National Research Council of Italy (CNR), located at the University of Calabria. I am fascinated by the possibility of exploring fundamental questions in physics by working on relatively simple, table-top experiments. My primary research lies in phenomena at fluid interfaces, including active systems and hydrodynamic analogs. My research approach also benefits from mathematical modelling and continuous collaboration with theoreticians.

Previously I worked at Università della Calabria, Université Paris Diderot, Massachusetts Institute of Technology, Brown University and Institut de Physique de Rennes.

EDUCATION

University of Paris VII Denis Diderot and University of Calabria. France/Italy
Ph.D. in Physics: Fluid Dynamics and Science of Mesophases. 2008–2011

Mention: *Very Honorable, with Committee Praise.*

Committee composed of:

Riccardo Barberi (Università della Calabria, co-supervisor);
Roberto Bartolino (Università della Calabria, examiner);
Martine Ben Amar (École Normale Supérieure, examiner);
Christophe Clanet (CNRS - École Polytechnique, president);
Yves Couder (Université Paris VII Denis Diderot, supervisor);
Francesco Mantegazza (Università di Milano Bicocca, referee);
Marc Rabaud (Université Paris-Sud, referee).

- Research on the Faraday instability in floating drops: an example of a hydrodynamic instability in a domain with flexible boundaries.
 - Experimentally characterized and theoretically rationalized the equilibrium shapes of floating liquid drops deformed by the radiation pressure of surface waves.
 - Experimentally characterized the non-equilibrium behavior of floating drops deformed by radiation pressure; rationalized their self-propulsion.
 - Collaboration with Prof. Martine Ben Amar (Ecole Normale Supérieure).
- Research on electrohydrodynamics and topological defects in nematic liquid crystals.
 - Characterized the variation of the topological transition threshold in nematic mixtures as a function of the concentration of the components.

University of Calabria. Rende (CS), Italy
Master in Physics of Matter. 110/110 cum laude 2006–2008

- Six-month internship at University Paris VII: Faraday instability in deformable domains.
 - Investigated the equilibrium shapes of drops deformed by the radiation pressure of surface waves.

University of Calabria. Rende (CS), Italy
Bachelor in Physics. 110/110 cum laude 2003–2006

- Three-month internship at University of Calabria: “A novel method to create probes for atomic force spectroscopy”.
 - Developed a new technique to obtain probes for the Atomic Force Microscope with typical curvature radius of about 100 nm.

RESEARCH EXPERIENCE

National Research Council of Italy (CNR), Institute of Nanotechnology. Rende, Italy
Researcher 2021–present

- Research subject: Self-propulsion at fluid interfaces and hydrodynamic analogs.

Institute of Physics of Rennes, University of Rennes 1. Rennes, France
Researcher funded by the program CNRS-Momentum. 2018–2020

- PI of the project “Self-organization of fluid and solid structures on fluid interfaces at the macroscopic scale”. Supervising a post-doc. Topics:
 - Active volatile drops on liquid baths.
 - Faraday instability in a rotating liquid.
 - Capillary surfers: wave-driven particles at a fluid interface (with Prof. D. Harris at Brown University).

Brown University, School of Engineering. Providence (RI), USA
Post-doctoral Research Associate in the group of Prof. Daniel M. Harris. 2017–2018

- Research subject: Forces on capillary floaters.
 - Experimentally characterized and theoretically rationalized the friction experienced by centimetric objects that slide on water.
 - Experimentally characterized and theoretically rationalized the capillary attraction between centimetric objects resting on water (“Cheerios effect”).

Massachusetts Institute of Technology, Dept. of Mathematics. Cambridge (MA), USA
Post-doctoral Research Associate in the group of Prof. John W. M. Bush. 2015–2017

- Research subject: Walking droplets as a hydrodynamic analog of microscopic systems.
 - Rationalized the reflection of a walking droplet from a planar wall; found non-specular reflection.
 - Characterized through precise experiments the interaction of walking droplets with single and double slits; found non-quantum behavior in this configuration.
 - Characterized the refraction-like behavior of walking droplets experiencing a reduction in liquid depth; found an effective Snell’s law and other optical analogs.
 - Experimentally investigated the diffusion of a droplet bouncing on a field of standing waves.
 - Experimentally investigated the spin lattices of walking droplets; found anti-ferromagnetic order. Work actively pursued by P. Sáenz at MIT. Collaboration with Prof. Jörn Dunkel (MIT).

Massachusetts Institute of Technology, Dept. of Mathematics. Cambridge (MA), USA
Post-doctoral Fellow (visiting) in the group of Prof. John W. M. Bush. 2014

- Experimentally demonstrated and theoretically rationalized the partial coalescence of a soap bubble and a soap film.
- Designed and set up an experiment for the study of walking droplets interacting with a single slit; found transition to chaos.

University of Calabria, Dept. of Physics. Rende (CS), Italy
Post-doc in the group of Prof. Riccardo Barberi 2012–2015

- Research on the project “Innovative nanotechnologic platforms for drugs delivery in Ophthalmology”. Collaboration with Marco Lombardo (Doctor of Medicine, Vision Engineering Italy).
 - PI of the group investigating the interaction of ultraviolet light with the human cornea.
 - Designed apparatus that mimics the physiological conditions of the eye for the measurement of light absorbance and the detection of clinical solutions inside the human cornea.
 - Tested a number of trans-epithelial commercial solutions; assessed which solutions were effectively absorbed and could be used for medical treatment.

- Research subject n.2: electro-convective instabilities and topological defects in nematic liquid crystals.
 - Discovered curved patterns of electro-convection in nematics with planar-periodic alignment.
 - Characterized the topologically non-equivalent textures generated by the electrohydrodynamics of nematic liquid crystals.

SKILLS AND EXPERTISE

Fluid Dynamics	fluid interfaces, surface waves, surface tension.
Soft Matter	active matter, liquid crystals, corneal tissues, AFM, cleanroom techniques.
Non-linear physics	pattern formation, self-organization.
Mechanics	design and construction of setups for mechanical vibrations.
Fabrication	3D printing and laser cutting.
Computer Languages	C/C++, MATLAB.
Software & Tools	Mathematica, Fusion 360 (3D designing), Adobe Illustrator.
Languages	Italian (first language), French (fluent), English (fluent).

GRANTS

Short-Term Mobility grant. CNR-Nanotec, Rende, Italy
National Research Council of Italy (CNR). 2022

To visit the Harris' Laboratory in the School of Engineering at Brown University (RI), USA.

Short-Term Mobility grant. CNR-Nanotec, Rende, Italy
National Research Council of Italy (CNR). 2021

- 2100€ for the visit to CNR-Nanotec of Antonin Eddi, researcher in the French CNRS.

Project grant. Institute of Physics of Rennes, France
French National Center for Scientific Research (CNRS), Momentum program. 2018–2020

- About 350 k€ (included a personal salary and two-year salary for a post-doc).

Workshop grant. Brown University, USA
National Science Foundation of U.S.A. (NSF), Condensed Matter Physics program. 2018

- 5000 \$ for organizing the workshop “Hydrodynamic Quantum Analogs 8” (with Prof. Daniel Harris, award number 1841840).

Mobility grant. University of Paris VII, France
Université Franco-Italienne. 2009–2011

- About 4500 € to spend for travels during the Ph.D.

FELLOWSHIPS

Post-doctoral Fellowship University of Haifa, Israel
The Hatter Departement of Marine Technology. 2015–2016

- To spend at the Massachusetts Institute of Technology, Cambridge (MA).

Ph.D. fellowship. University of Paris VII, France
Ph.D. funded by Université Franco-Italienne 2008–2011

- To spend at University of Paris VII (main institution) and University of Calabria (secondary institution).

TEACHING EXPERIENCE

- Teaching Assistant for Laboratory of Mechanics and Thermodynamics.** Univ. of Calabria, Italy
Developing experimental projects with bachelor students in Physics. Spring 2022
- Teaching Assistant for Scientific Data Acquisition and Processing.** Univ. of Calabria, Italy
Developing experimental projects with master students in Physics. Fall 2021
- Instructor of Macroscopic Quantum Analogs.** Univ. of Calabria, Italy
PhD students in Physical, Chemical, Materials Sciences and Technologies. Summer 2021
- Assistant Instructor of Electricity and Magnetism.** Univ. of Calabria, Italy
Bachelors in Electronic Engineering. Spring 2021
- Assistant Instructor of Fluid Mechanics.** Univ. of Rennes 1, France
Master in Fundamental Physics. Fall 2019 and 2020
- Instructor of Fluid Mechanics.** Univ. of Rennes 1, France
Master in Fundamental Physics. Fall 2018
- Teaching Assistant (Instructor) of Differential Equations.** MIT, USA
1st year bachelor level. Overall rating: 6.2/7. Spring 2017
- Assistant Instructor of Quantum Mechanics and General Physics.** Univ. of Calabria, Italy
Bachelors in Materials Science and Architectural Engineering. 2012–2013
- Assistant Instructor of Physics and Mathematics.** Univ. of Paris VII, France
Bachelors in Physics, Chemistry and Life Sciences. 2008–2011

TEACHING QUALIFICATIONS

- French Qualification for Assistant Professor.** France
Maître de conférences. 2017
- Italian Qualification for teaching in high schools.** Italy
Active Formative Apprenticeship, for teaching Mathematics and Physics. Score 99/100. 2015
- Apprenticeship in a high school.
 - Attended classes on the teaching of Mathematics and Physics, Pedagogy and didactics for inclusion, Didactical techniques for inclusion, History of Pedagogy, Theory and Methods of evaluation.

SUPERVISION

- Alessia Cirimele** CNR-Nanotec, Italy
Bachelor student, University of Calabria, Italy. Apr–July 2022
- Diffraction with a pilot-wave model.
- Capucine Eudes** CNR-Nanotec, Italy
Master student, École Nationale d'Ingénieurs de Brest, France. Mar–July 2022
- Wave field of capillary surfers.
- Antoine Bellaigue** Institute of Physics of Rennes, France
Master student in Physics, University of Rennes 1, France. May–July 2020

- Numerical simulations of a classical wave-particle duality interacting with single and double slits.

Jérémy Archer

Master student in Physics, University of Rennes 1, France.

Institute of Physics of Rennes, France

May–July 2020

- Surface reconstruction of Faraday instability patterns.

Paul Remigereau

Master student in Physics, University of Rennes 1, France.

Institute of Physics of Rennes, France

May–July 2019

- Faraday instability in a rotating fluid.

Benjamin Reichert

Post-doc within the program CNRS-Momentum.

Institute of Physics of Rennes, France

2018–2020

- Thermal active drops and Faraday instability in a rotating liquid.

Co-supervisor of Pierluigi Bilotto and Giuseppe Di Nardo

Bachelor students, final internship.

University of Calabria, Italy

2014

- Walking droplets interacting with a single slit.
- Analogies between the De Broglie-Bohm pilot-wave theory and walking droplets.

MENTORING

Paul Massiot

Master student in Physics, University of Rennes 1, France

Institute of Physics of Rennes, France

Sep. 2019 – Jan. 2020

- Technique for the reconstruction of a perturbed fluid surface.

Ian Ho

Bachelor student.

Brown University, USA

Jan.–July 2018

- Centimetric objects sliding on water and their mutual interaction due to capillary forces.

Roy Glavanitz

Bachelor student from Munich University of the Federal Armed Force.

Brown University, USA

May–July 2018

- Design and implementation of a swimmer at intermediate Reynolds number.

Alexis Goujon

Master student from Ecole Polytechnique.

MIT, USA

Spring 2017

- Spin lattices of walking droplets.

Jean-Baptiste Moiroud

Master student from Ecole Polytechnique.

MIT, USA

Spring 2017

- Walking drops in double and triple cavities. Tunneling of walking drops.

Crystal Owen, Andrew M. Fiore and Filip Twarowski

Ph.D. and master students, for projects of the course Interfacial Phenomena.

MIT, USA

Spring 2016

- Vibration of soap bubbles.
- Non-linear phenomena in a liquid-on-liquid wetting system.
- Faraday-wave propelled boat.

Benjamin Aubin

Master student from Ecole Polytechnique.

MIT, USA

Apr.–July 2016

- Refraction of walking droplets.

Clément Fontaine

Bachelor student.

University Paris VII

May 2010

- Faraday instability in a rotating fluid.

ORGANIZATION OF MEETINGS

Co-organizer of the meeting Hydrodynamic Quantum Analogs 8 Brown University, USA

July 2018

- About 30 participants from: MIT, University of Liège, IMPA (Rio de Janeiro), New Jersey Institute of Technology, National Autonomous University of Mexico, University of Bath (UK), California Polytechnic State University, Monash University (Australia) and Brown University.

Co-organizer of the meeting Hydrodynamic Quantum Analogs 5

Calabria, Italy

July 2015

- About 25 participants from: MIT, University of Liège, IMPA (Rio de Janeiro), KAUST (Saudi Arabia), New York University, Max Planck Institute for Dynamics and Self-organization (Göttingen), University of Bath (UK) and University of Calabria.

ACADEMIC RESPONSIBILITIES

Elected representative of Ph.D. students.

Doctorate School “Condensed Matter and Interfaces”.

University of Paris VII, France

2009–2011

Elected representative of Physics students.

Laurea Course Council, addressing organization of classes and course work.

Univ. of Calabria, Italy

2006–2008

AWARDS

Second best presentation in Physics of Matter, Italian Physical Society. Italy (virtual)

Meeting of the Italian Physical Society.

2021

- Presentation “Hydrodynamic Spin Lattices”.

Gallery of Fluid Motion Award Winner.

American Physical Society - Division of Fluid Dynamics

Denver (CO), USA

Nov. 2017

- Video “Spin lattices of walking droplets”.

Travel award.

American Physical Society - Division of Fluid Dynamics.

Denver (CO), USA

Nov. 2017

- 500\$ to participate to the meeting of the Division of Fluid Dynamics of the American Physical Society.

Milton van Dyke Award Winner.

American Physical Society - Division of Fluid Dynamics.

Boston (MA), USA

Nov. 2015

- Video “The merger of a bubble and a soap film”.

Milton van Dyke Award Winner.

American Physical Society - Division of Fluid Dynamics.

San Francisco (CA), USA

Nov. 2014

- Video “Faraday instability in floating drops”.

Best presentation in Physics of Matter, Italian Physical Society. Naples, Italy
Meeting of the Italian Physical Society. 2012

- Presentation “Faraday instability in deformable domains”.

OUTREACH

Seminar and visit at Liceo 'Pizi' (high school). Palmi, Italy
Invited by Prof. Sergio Polito to a one-day visit to the high school. Apr. 2022

- Included seminar with title ”Analogie quantistiche in fenomeni macroscopici” (Quantum analogs in macroscopic phenomena) and assistance to students performing experiments in physics.

Organizer of a stand for a Science Festival. Rennes, France
Stand of the Soft Matter Department of the Institute of Physics of Rennes. Oct. 2020

Guide of high school students during the Science Week. University of Paris VII, France
One-day visit of students from Lycée Charles de Foucault of Paris. Oct. 2010

Guide of University students. University of Paris VII, France
One-day visit of the Physics Students Association of Perugia, Italy. Nov. 2010

- Includes a meeting with Prof. Atef Asnacios.

SEMINARS

Wave-driven particles at a fluid interface Rome, Italy
Department of Physics of La Sapienza and CNR - Institute for Complex Systems. Sep. 2021

Wave-driven particles at a fluid interface Padua, Italy
Department of Physics, University of Padua. Sep. 2021

Capillary surfers Paris, France (virtual)
Laboratoire Gulliver - ESPCI. May 2021

Hydrodynamic spin lattices Italy (virtual)
Joint GSSI - Sapienza Webinars on Statistical Mechanics. May 2021

Water sliders, capillary attraction and capillary surfers Paris, France (virtual)
Laboratoire Matière et Systèmes Complexes. Feb. 2021

Capillary surfers: Self-propelling particles at an oscillating fluid interface Providence (RI), USA (virtual)
Fluids at Brown and Fluids and Thermal Sciences Joint Seminar Series. Apr. 2020

Hydrodynamic analogs on a vibrating bath Poitier, France
Pprime Institute. Feb. 2019

Soap bubbles, walking drops and sliders at fluid interfaces Marseille, France
Laboratories IRPHE and IUSTI, University of Aix-Marseille. Oct. 2018

Drops, sliders and bubbles at the liquid surface Rennes, France
Rennes School on Complex Systems. Oct. 2018

Soap bubbles, walking drops and sliders at fluid interfaces <i>Laboratories FAST and LIMSI, University of Paris-Sud.</i>	Orsay, France <i>Sep. 2018</i>
Three experiments with drops and bubbles on fluid interfaces <i>School of Engineering at Brown University.</i>	Providence (RI), USA <i>Nov. 2017</i>
Walking droplets interacting with boundaries <i>Institute of Light and Matter, University Claude Bernard Lyon 1.</i>	Lyon, France <i>Oct. 2017</i>
Hydrodynamic analogs <i>Department of Physics at the University of Massachusetts, Boston.</i>	Boston (MA), USA <i>Apr. 2017</i>
Walking droplets interacting with submerged boundaries <i>Institute of Physics of Rennes, University of Rennes 1.</i>	Rennes, France <i>Dec. 2016</i>
Three experiments with drops and bubbles on fluid interfaces <i>Marine Technology Research Institute (INSEAN).</i>	Rome, Italy <i>May 2015</i>
Faraday instability in deformable domains <i>Physical Mathematics group, Dept. of Mathematics, Massachusetts Institute of Technology.</i>	Cambridge (MA), USA <i>Feb. 2014</i>
The Faraday instability in deformable domains <i>Jean le Rond d'Alembert Institute, University Pierre et Marie Curie (UPMC).</i>	Paris, France <i>Jan. 2012</i>

INVITED CONFERENCE PRESENTATIONS

Capillary disks: sliding friction, capillary attraction and wave-driven propulsion <i>* Selected for long talk at Rencontre du Non-Linéaire (RNL), then meeting canceled.</i>	Paris, France <i>2020</i>
Spin lattices of walking droplets. <i>Conference Waves Côte d'Azur.</i>	Nice, France <i>Jun. 2019</i>
Diffraction and interference of walking droplets <i>European Fluid Mechanics Conference.</i>	Sevilla, Spain <i>Sep. 2016</i>

OTHER CONFERENCE PRESENTATIONS

Non-exhaustive list.

Macroscopic quantum analogs <i>Fifteenth Biennial Quantum Structure 2022 Conference.</i>	Tropea, Italy <i>Jun. 2022</i>
Emergent order in hydrodynamic spin lattices <i>*Selected for the workshop of the Institute of Nanotechnology of CNR.</i>	(online) <i>Nov. 2021</i>
Forces on capillary disks <i>International Conference of Theoretical and Applied Mechanics</i>	(online) <i>Aug. 2021</i>
Exploring diffraction with a pilot-wave model <i>March Meeting of the American Physical Society.</i>	(online) <i>Mar. 2021</i>
Capillary surfers: self-propelling particles at an oscillating fluid interface <i>Meeting of the Italian Physical Society.</i>	(online) <i>Sep. 2020</i>

Exploring diffraction with a pilot-wave model	Chicago (IL), USA (online)
<i>Meeting of the Division of Fluid Dynamics of the American Physical Society.</i>	<i>Nov. 2020</i>
Capillary surfers: Self-propelling particles at an oscillating fluid interface	Seattle (WA)
<i>Meeting of the Division of Fluid Dynamics of the American Physical Society.</i>	<i>Nov. 2019</i>
Friction on water sliders	Vienna, Austria
<i>European Fluid Mechanics Conference</i>	<i>Sep. 2018</i>
Spin lattices of walking droplets	Grenoble, France
<i>Condensed Matter Days, French Physical Society.</i>	<i>Aug. 2018</i>
Partial coalescence of a soap bubble with a soap film	Los Angeles (CA), USA
<i>March Meeting of the American Physical Society.</i>	<i>March 2018</i>
Droplets bouncing on a standing wave field	Denver (CO), USA
<i>Meeting of the Division of Fluid Dynamics of the American Physical Society.</i>	<i>Nov. 2017</i>
Walking drops interacting with submerged boundaries	Mexico City, Mexico
<i>Workshop "Waves and particles, novel insights".</i>	<i>May 2017</i>
Diffraction and interference of walking droplets	Portland (OR), USA
<i>Meeting of the Division of Fluid Dynamics of the American Physical Society.</i>	<i>Nov. 2016</i>
Walking droplets interacting with planar boundaries	Boston (MA), USA
<i>Meeting of the Division of Fluid Dynamics of the American Physical Society.</i>	<i>Nov. 2015</i>
Faraday instability in deformable domains	San Francisco (CA), USA
<i>Meeting of the Division of Fluid Dynamics of the American Physical Society.</i>	<i>Nov. 2014</i>
Order reconstruction in turbulent nematics	Ravenna, Italy
<i>Meeting of the Italian Liquid Crystal Society.</i>	<i>2014</i>
Faraday instability in deformable domains	Naples, Italy
<i>Meeting of the Italian Physical Society.</i>	<i>2012</i>
Turbulence induces change of topology in calamitic nematics	Rome, Italy
<i>Meeting of the Italian Liquid Crystal Society.</i>	<i>2012</i>
Mutual adaptation of a Faraday instability pattern with its flexible boundaries	Denmark
<i>Fluid - DTU Summer School.</i>	<i>2011</i>
The interplay of an instability pattern with its flexible boundaries	Agay, France
<i>Conference "On growth and forms" in honour of Prof. Yves Couder.</i>	<i>2010</i>
Faraday instability in deformable domains	Denmark
<i>Fluid - DTU Summer School</i>	<i>2009</i>
Force measurements at nanoscale by an atomic force microscope	Cortona, Italy
<i>Summer course of Scuola Normale Superiore.</i>	<i>2006</i>

SUBMITTED ARTICLES

- [1] I. Ho*, G. Pucci*, A. U. Oza and D. M. Harris. Capillary surfers: wave-driven particles at a fluid interface. *Submitted to Physical Review Letters*. arXiv:2102.11694v2 (2021). *Co-first author.

- [1] B. Reichert, J.-B. Le Cam, A. Saint-Jalmes and **G. Pucci**. Self-propulsion of a volatile drop on the surface of an immiscible liquid bath. *Phys. Rev. Lett.* **127**, 144501 (2021).
- [2] P. J. Sáenz, **G. Pucci**, S. E. Turton, A. Goujon, R. R. Rosales, J. Dunkel and J. W. M. Bush. Emergent order in hydrodynamic spin lattices. *Nature* **596**, 58-62 (2021).
- [3] L. Barnes, **G. Pucci**, and A. U. Oza. Resonant interactions in bouncing droplet chains. *Comptes Rendus Mécanique* **348** (6-7), 573-589 (2020).
- [4] I. Ho, **G. Pucci**, and D. M. Harris. Direct measurement of capillary attraction between floating disks. *Phys. Rev. Lett.* **123**, 254502 (2019). Featured in Physics and Editors' suggestion.
- [5] **G. Pucci**, I. Ho and D. M. Harris. Friction on water sliders. *Sci. Rep.* **9**, 4095 (2019).
- [6] **G. Pucci**, F. Carbone, G. Lombardo, C. Versace, R. Barberi. Topologically non-equivalent textures generated by the nematic electrohydrodynamics. *Liq. Cryst.* **46** (4), 649-654 (2019).
- [7] P. J. Sáenz, **G. Pucci**, A. Gujon, T. Cristea-Platon, J. Dunkel and J. W. M. Bush. Spin lattices of walking droplets. *Phys. Rev. Fluids* **3**, 100508 (2018); winning entry to the Gallery of Fluid Motion of the American Physical Society.
- [8] **G. Pucci**, D.M. Harris, L. Faria and J. W. M. Bush. Walking droplets interacting with single and double slits. *J. Fluid Mech.* **835**, 1136-1156 (2018).
- [9] N. Sungar, L. Tambasco, **G. Pucci**, P. J. Saenz and J. W. M. Bush. Hydrodynamic analog of particle trapping with the Talbot effect. *Phys. Rev. Fluids* **2**, 103602 (2017).
- [10] D. M. Harris, **G. Pucci**, V. Prost, J. Quintela and J. W. M. Bush. The merger of a bubble and a soap film, *Phys. Rev. Fluids* **1** (5), 050505 (2016); Milton Van Dyke Award of the Gallery of Fluid Motion of the American Physical Society.
- [11] **G. Pucci**, P. J. Saenz, L. M. Faria and J. W. M. Bush. Non-specular reflection of walking droplets, *J. Fluid Mech.* **804**, R3 (2016).
- [12] **G. Pucci**, D. Lysenko, C. Provenzano, Yu. Reznikov, G. Cipparrone and R. Barberi. Patterns of electro-convection in planar-periodic nematic cells. *Liq. Cryst.* **43** (2), 216-221 (2016).
- [13] M. Lombardo, N. Micali, V. Villari, S. Serrao, **G. Pucci**, R. Barberi, G. Lombardo. Ultraviolet A: Visible spectral absorbance of the human cornea after transepithelial soaking with dextran-enriched and dextran-free riboflavin 0.1% ophthalmic solutions. *J. Cataract Refract. Surg.* **41** (10), 2283 - 2290 (2015).
- [14] **G. Pucci**, M. Ben Amar and Y. Couder. Faraday instability in floating drops. *Phys. Fluids.* **27**, 091107 (2015); Milton Van Dyke Award of the Gallery of Fluid Motion of the American Physical Society.
- [15] **G. Pucci**, D. M. Harris and J. W. M. Bush. Partial coalescence of soap bubbles. *Phys. Fluids.* **27**, 061704 (2015).
- [16] **G. Pucci**, F. Carbone, C. Vena, G. Lombardo, C. Versace and R. Barberi. DSM1-DSM2 Transition Threshold in Turbulent Nematic Mixtures. *Mol. Cryst. Liq. Cryst.* **614**(1), 100-105 (2015).
- [17] M. P. De Santo, G. Petriashvili, R. Gary, **G. Pucci**, R. Barberi. Anti-counterfeiting and identification solutions using soft matter. *Rend. Fis. Acc. Lincei* **26** (2), S255-S259 (2015).
- [18] **G. Pucci**. Faraday instability in floating drops out of equilibrium: motion and self-propulsion from wave radiation stress. *Int. J. Non Linear Mech.* **75**, 107-114 (2015).

- [19] M. Lombardo, **G. Pucci**, R. Barberi, G. Lombardo. Interaction of ultraviolet light with the cornea: Clinical implications for corneal crosslinking. *J. Cataract Refract. Surg.* **41**(2), 446-459 (2015).
- [20] **G. Pucci**, M. Ben Amar and Y. Couder. Faraday instability in floating liquid lenses: the spontaneous mutual adaptation due to radiation pressure. *J. Fluid Mech.* **725**, 402-427 (2013).
- [21] **G. Pucci**. Faraday instability in deformable domains. *Il Nuovo Cim.*, **36** C n.4, 61-70 (2013).
- [22] **G. Pucci**, E. Fort, M. Ben Amar and Y. Couder. Mutual Adaptation of a Faraday Instability Pattern with its Flexible Boundaries in Floating Fluid Drops. *Phys. Rev. Lett.* **106**, 024503 (2011).
- [23] **G. Pucci**, M.P. De Santo, G. Carbone and R. Barberi. A novel method to prepare probes for atomic force spectroscopy. *Dig. J. Nanomater. Bios.* **1**(3), 99-103 (2006).