

Name: Maria Antonia Iatì

Orcid: [orcid.org/0000-0002-3576-8656](https://orcid.org/0000-0002-3576-8656)

Date of birth: May 4th, 1972

Nationality: Italian

## POSITIONS & EDUCATION

- Since 01/2023: “Primo Ricercatore” (senior researcher) CNR, Istituto per i Processi Chimico-Fisici, Messina, Italy.
- 2008-2022: permanent position as a researcher at CNR, Istituto per i Processi Chimico-Fisici, Messina, Italy.
- 2008-2017 and 2021-present: member of the Board of the Doctorate School in Physics of the University of Messina
- 2006-2007: fellowship on “Characterization of cosmic dust analogs”, Dip. di Fisica della Materia e Tecnologie Fisiche Avanzate, Università di Messina
- 2002 – 2006: Research grant (assegno di ricerca), Dip. di Fisica della Materia e Tecnologie Fisiche Avanzate, Università di Messina
- 1999 – 2001: Post-doctoral fellow, Dip. di Fisica della Materia e Tecnologie Fisiche Avanzate, Università di Messina
- 1998 – 1999: Post-doctoral fellow, Department of Physics, University of Waterloo, Ontario, Canada
- 1994 – 1997: DPhil in Physics, Supervisor: Prof. F. Borghese, Università di Messina, Italy.
- 1994: Master in Physics (Laurea), Supervisor: Prof. F. Borghese, Università di Messina, Italy. 110/110 cum Laude.
- 1989: High school leaving qualification in classical studies, 60/60

## SCIENTIFIC ACTIVITY

My research activity mainly deals with light scattering and absorption processes by non spherical particles. The analytical and computational approach is based on the multipole expansion of the electromagnetic fields and the Transition matrix method. Over the years I have applied this technique in several research fields: astrophysics (modelling of interstellar dust grains) and astrobiology (role of dust in chiral selection), nano-optics (optical trapping of non-spherical particles: optical tweezers), and plasmonics (optical behaviour of metal nano-particles).

I co-authored 81 publications in Web of Science, several peer-reviewed proceedings and a couple of book chapters.

My h-index according to ISI Web of Science is **25**, for a total of **3298** collected citations. According to Google Scholar, my h-index is 29 with a total of 4944 citations.

I attended more than 40 national and international conferences and scientific meetings with oral and poster presentations.

## NATIONAL & INTERNATIONAL GRANTS (as principal investigator for CNR)

- 2019 – 2024: “Marie Curie” International Training Network “Active Matter”, ETN, European Commission (4 years).

## PARTICIPATION TO NATIONAL & INTERNATIONAL PROJECTS

- 2023 – 2025: PRIN 2022 Exo-planetary Cloudy Atmospheres and Stellar High energy (Exo-Cash)
- 2022 – 2025: MUR-PNRR project “Sicilian MicronanoTech Research And Innovation Center - SAMOTHRACE”
- 2020 – 2021: Progetto Accordo ASI-INAF “Spectroscopy of Planetary and Atmospheric particulate by optical Tweezers - SPACE Tweezers”, ASI-INAF n.2018-16-HH.0, "Attività di Studio per la comunità, scientifica nazionale Sole, Sistema solare e Esopianeti" (2 years).
- 2016-2019: International Project, Bilaterale CNR-CAS (Czech Academy of Sciences, Czech Republic) “Optical Manipulation and characterization of nonspherical nanoparticles” (3 years)
- 2013-2017: International Project MPNS COST Action 1302 “NanoSpectroscopy” (4 years)
- 2013-2015: National Project - “Piano di Azione e Coesione”, PAC02L3\_00087 “Social Innovation cluster by a cross-disciplinary nanotechnology platform environmental monitoring and healthcare (SOCIAL-NANO)” (2 years).
- 2012-2016: MPNS COST Action 1205 “Advances in Optofluidics: Integration of Optical Control and Photonics with Microfluidics” (4 years).
- 2012-2015: National Project PON 2007-2013 – PON01\_01322, “PANREX: Packaging basato su nanomateriali per ricevitori ed exciter compatti per applicazioni radar con antenna a scansione elettronica del fascio”
- 2012-2015: National Project PON 2007-2013 – PON02PE\_00355\_2964193 “Sviluppo di micro e nanotecnologie e sistemi avanzati per la salute dell'uomo (HIPPOCRATES)” (3 years)
- 2010-2012: International Project, Royal Society, with Univ. College London (UK) "Photonic Force Microscopy with Nanostructures" (2 years)
- 2009-2013: European Project, EU FPVII “NANOANTENNA - Development of a high sensitive and specific nano-bio-chemo-sensor based on surface enhanced vibrational spectroscopy through effective optical nanoantenna”
- 2009-2011: International Project, Royal Society, with Cambridge University (UK). "Optical Trapping of Carbon Nanotubes" (2 years)
- 2008-2009: CNR project "Curiosity-Driven Research", CNR DG-RSTL.063.006; "Study and manipulation of colloidal systems by multiple optical tweezers" (2 years)
- 2005-2007: National Project, PRIN 2005 “La polvere interstellare come agente e oggetto dell'evoluzione galattica” (2 years)
- 2003-2005: National Project, PRIN 2003 “Solidi e molecole nello spazio interstellare” (2 years)
- 2000-2002: National Project, PRIN 2000 “Polvere e gas nello spazio: connessioni ed evoluzione” (2 years)
- 1998-2000: National Project, PRIN 1998 “Polvere e molecole in ambienti astrofisici” (2 years)

## NATIONAL & INTERNATIONAL ACKNOWLEDGMENTS

- 2019: National Scientific Habilitation (ASN) as Full Professor in Italian universities.
- 2017: National Scientific Habilitation (ASN) as Associate Professor in Italian universities.

## SUPERVISION OF STUDENTS & POSTDOCTORAL FELLOWS

- Supervision of 3 PhD students
- Supervision of 4 master/bachelor students
- Tutoring of 2 visiting students

## MEMBERSHIP

- INAF (Istituto Nazionale di Astrofisica)
- SIA (Società Italiana di Astrobiologia)
- SIOF (Società Italiana di Ottica e Fotonica)

## ORGANIZATION OF SCIENTIFIC MEETINGS

- Member of the Scientific and of the Local Organizing Committee of the 21<sup>th</sup> Electromagnetic and Light Scattering Conference (ELS XXI), that will be held in Milazzo (Italy), 23-27 June 2025
- Co-organizer of the Physics seminars “Appunti di Fisica”, starting on 2005 up today in collaboration between the University of Messina and the CNR-IPCF
- From the 2007 co-organizer of the annual Workshop “Appunti di Fisica Teorica”, Messina
- Scientific Committee of the 20<sup>th</sup> Electromagnetic and Light Scattering Conference (ELS XX), 15-19 May, 2023, Almunecar, Spain
- Co-Organizer of Active Matter on the Strait, 3-5 April 2023, Messina
- Member of the Scientific Committee of the Study Day “On the traces of the origins of life: from the laboratory to space exploration”, 31 May 2023, Messina
- Member of the Scientific Committee of the 19<sup>th</sup> Electromagnetic and Light Scattering Conference (ELS XIX) (12-16 July 2021)
- Member of the Local Organizing Committee of ICES 2015 (2<sup>nd</sup> International Conference on Enhanced Spectroscopies), Messina
- Member of the Organizing Committee of the international conference “Electromagnetic & Light Scattering XIII”, Sept. 2011, Taormina (Italy).
- Member of the local organizing committee of the International Conference “Light, Dust and Chemical Evolution” (Sept. 26-30, 2004, Gerace, Reggio Calabria, Italy)
- Co-organizer of the International workshop “Dust and molecules in the interstellar medium” (Messina, March 25, 2003)

## COMMISSIONS OF TRUST & SERVICE

I also served as:

- Member of the 2025 OMA (Optical Manipulation and Its Applications) Technical Program Committee (within the Optica Biophotonics Congress: Optics in the Life Sciences, which will be held from 20-24 April 2025 in Coronado, California, USA)
- Member of the Selection Committee for the 2024 Elsevier/JQSRT Waterman Young Scientist Award on Light Scattering and the Goody Young Scientist Award on Atmospheric Radiation & Remote Sensing.
- 2021-2024: member of the organizing and scientific committee of Festival Cosmos, Reggio Calabria, Italy

- 2023: member of the OMA (Optical Manipulation and its Applications) Technical Program Committee (within the Optica Biophotonics Congress: Optics in the Life Sciences, 24-25 April 2023, Vancouver, Canada)
- 2021: member of the OMA (Optical Manipulation and its Applications) Technical Program Committee (within the OSA Biophotonics Congress: Optics in the Life Sciences, 12-16 April 2021)
- From June 2005 to December 2012: editorial assistant of the Journal AAPP Atti dell'Accademia Peloritana dei Pericolanti - Classe di Scienze Fisiche, Matematiche e Naturali
- 2011-2012: Guest Editor, JQSRT, Special Issue vol. 113, Issue 18 (2012), on " Electromagnetic & Light Scattering XIII".
- 2011: Guest Editor, Atti dell'Accademia Peloritana dei Pericolanti, vol. 89-S1 (2011), on " ELS-XIII Conference".

#### LIST OF PUBLICATIONS

- F.Borghese, P.Denti, R.Saija, M.A.Iatì, O.I.Sindoni  
*Optical resonances of spheres containing an eccentric spherical inclusion,*  
Journal of Optics. **29**, 28-34 (1998)
- P.Denti, F.Borghese, R.Saija, M.A.Iatì, O.I.Sindoni  
*Optical properties of inclusion-containing hemispheres on a perfectly reflecting surface,*  
Journal of Optics **29**, 78-87(1998)
- P. Denti, F. Borghese, R. Saija, M.A. Iatì, and O. I. Sindoni,  
*Optical properties of a dispersion of randomly oriented identical aggregates of spheres deposited on a plane surface,* Applied Optics, **38**, 6421-6430 (1999)
- F. Borghese, P. Denti, R. Saija, M.A. Iatì, and O. I. Sindoni,  
*Optical properties of a dispersion of anisotropic particles with non-randomly distributed orientations. The case of atmospheric ice crystals,*  
Journal of Quantitative Spectroscopy and Radiative Transfer, **70**, 237-251 (2001)
- M.A.Iatì, C. Cecchi-Pestellini, D.A.Williams, F. Borghese, P.Denti, R. Saija and S. Aiello  
*Porous interstellar grains,* Monthly Notices of the Royal Astronomical Society **322**, 749 - 756 (2001)
- R. Saija, M.A. Iatì, P. Denti, F. Borghese, P. Denti, and O. I. Sindoni,  
*Backscattered intensity from model atmospheric ice crystals in the millimeter wave range,*  
Applied Optics **40**, 5337-5342 (2001)
- R. Saija, M.A. Iatì, F. Borghese, P. Denti, S. Aiello and C. Cecchi-Pestellini,  
*Beyond Mie Theory: the Transition Matrix Approach in Interstellar Dust Modeling,*  
Astrophysical Journal **559**, 993-1004 (2001)
- R. Saija, M.A. Iatì, P. Denti, F. Borghese, A. Giusto and O. I. Sindoni,  
*Efficient light-scattering calculations for aggregates of large spheres,*  
Applied Optics **42**, 2785-2793 (2003)
- R. Saija, M.A.Iatì, A. Giusto, F. Borghese, P.Denti, S. Aiello and C. Cecchi-Pestellini,  
*Radiation pressure cross-sections of fluffy interstellar grains,*  
Monthly Notices of the Royal Astronomical Society **341**, 1239 - 1245 (2003)
- A. Giusto, R. Saija, M.A. Iatì, P. Denti, F. Borghese and O. I. Sindoni,  
*Optical properties of high-density dispersions of particles. Application to intralipid solutions,*  
Applied Optics (LP), **42**, 4375-4380 (2003)

- M.A. Iatì, R. Saija, A. Giusto, P. Denti, F. Borghese and C. Cecchi-Pestellini, *Optical properties of interstellar grain aggregates*, Journal of Quantitative Spectroscopy and Radiative Transfer, **89**, 43-51 (2004)
- M.A. Iatì, A. Giusto, R. Saija, F. Borghese, P. Denti, C. Cecchi-Pestellini and S. Aiello, *Optical properties of composite interstellar grains. A morphological analysis*, Astrophysical Journal **615**, 286-299 (2004)
- C. Cecchi-Pestellini, F. Scappini, R. Saija, M.A. Iatì, A. Giusto, S. Aiello, F. Borghese, P. Denti, *On the formation and survival of complex prebiotic molecules in interstellar grain aggregates*, International Journal of Astrobiology, **3**, 287-293 (2004)
- R. Saija, M.A. Iatì, A. Giusto, P. Denti, F. Borghese, *Transverse components of the radiation force on nonspherical particles in the T-matrix formalism*, Journal of Quantitative Spectroscopy and Radiative Transfer, **94**, 163-179 (2005)
- C. Cecchi-Pestellini, R. Saija, M. A. Iatì, A. Giusto, F. Borghese, P. Denti, S. Aiello, *Ultraviolet radiation inside interstellar grain aggregates. I. The density of radiation*, Astrophysical Journal **624**, 223-231 (2005)
- R. Saija, C. Cecchi-Pestellini, M. A. Iatì, A. Giusto, F. Borghese, P. Denti, S. Aiello, *Ultraviolet radiation inside interstellar grain aggregates. II. Field depolarization*, Astrophysical Journal **633**, 953-966 (2005)
- M.A. Iatì, R. Saija, A. Giusto, P. Denti, F. Borghese, C. Cecchi-Pestellini, *Exploring the dusty Universe*, Atti dell'Accademia Peloritana dei Pericolanti, Vol. **LXXXIII** DOI: 10.1478/C1A0501001 (2005)
- M.A. Iatì, R. Saija, A. Giusto, P. Denti, F. Borghese, C. Cecchi-Pestellini, *Light within small particles*, Journal of Quantitative Spectroscopy and Radiative Transfer **100**, 157-164 (2006)
- O.I. Sindoni, R. Saija, M. A. Iatì, F. Borghese, P. Denti, G. E. Fernandes, Y. Pan, R. Chang, *Optical scattering by biological aerosols: experimental and computational results on spore simulants*, Optics Express **14**, No.15, 6942-6950 (2006)
- F. Borghese, P. Denti, R. Saija, M.A. Iatì, *Radiation torque on nonspherical particles in the transition matrix formalism*, Optics Express **14**, No. 20, 9508-9521 (2006)
- D. A. Williams, M. A. Iatì, *Chemistry and dust in star-forming regions of space*, Atti dell'Accademia Peloritana dei Pericolanti, Vol. **LXXXIV** DOI: 10.1478/C1C0601002 (2006)
- F. Borghese, P. Denti, R. Saija, M. A. Iatì, *On the rotational stability of nonspherical particles driven by the radiation torque*, Optics Express **15**, No. 14, 8960-8971 (2007)
- F. Borghese, P. Denti, R. Saija, M. A. Iatì, *Optical trapping of nonspherical particles in the T-matrix formalism*, Optics Express **15**, No. 19, 11985-11998 (2007)
- O.M. Maragò, P.G. Gucciardi, F. Bonaccorso, G. Calogero, V. Scardaci, A.G. Rozhin, A.C. Ferrari, P.H. Jones, R. Saija, F. Borghese, P. Denti, M.A. Iatì, *Optical Trapping of Carbon Nanotubes*, Physica E: Low-dimensional Systems and Nanostructures **40** (issue 7), 2347-2351 (2008)
- M. A. Iatì, R. Saija, F. Borghese, P. Denti, C. Cecchi-Pestellini, D.A. Williams, *Stratified dust grains in the interstellar medium. I. An accurate computational method for calculating their optical properties*, Monthly Notices of the Royal Astronomical Society **384**, 591-598 (2008)
- F. Borghese, P. Denti, R. Saija, M.A. Iatì, O.M. Maragò, *Radiation torque and force on optically trapped linear nanostructures*, Physical Review Letters **100**, 163903 (2008)
- R. Saija, P. Denti, F. Borghese, O.M. Maragò, M.A. Iatì, *Optical trapping calculations for metal nanoparticles. Comparison with experimental data for Au and Ag spheres*, Optics Express **17**, 10231-10241 (2009)

- A. Cacciola, C. Cecchi-Pestellini, R. Saija, M.A. Iatì, F. Borghese, P. Denti, *Ultraviolet radiation inside interstellar grain aggregates. III. Fluffy grains*, The Astrophysical Journal **701**, 1426-1435 (2009)
- A. Rahna Neves, A. Camposeo, S. Pagliara, R. Saija, F. Borghese, P. Denti, M.A. Iatì, R. Cingolani, O.M. Maragò, D. Pisignano. *Rotational dynamics of optically trapped nanofibers*, Optics Express 18, 822-830 (2010)
- C. Cecchi-Pestellini, A. Cacciola, M.A. Iatì, R. Saija, F. Borghese, P. Denti, A. Giusto, D.A. Williams, *Stratified dust grains in the interstellar medium - II. Time-dependent interstellar extinction*, Monthly Notices of the Royal Astronomical Society 408, 535-541 (2010)
- Maragò O. M., Bonaccorso F., Saija R., et al., *Brownian Motion of graphene*, ACS NANO 4, 7515-7523 (2010)
- Messina E, Cavallaro E, Cacciola A, et al., *Manipulation and Raman Spectroscopy with Optically Trapped Metal Nanoparticles Obtained by Pulsed Laser Ablation in Liquids*, JOURNAL OF PHYSICAL CHEMISTRY C, vol. 115, 5115-5122 (2011)
- Messina E, Cavallaro E, Cacciola A, et al. *Plasmon-Enhanced Optical Trapping of Gold Nanoaggregates with Selected Optical Properties*, ACS NANO, vol. 5, 905-913 (2011)
- M. A. Iatì, C. Cecchi-Pestellini, A. Cacciola, R. Saija, P. Denti, F. Borghese, *Stratified dust grains in the interstellar medium. III Infrared cross-sections*, JQSRT, Vol. 112, issue 11, p. 1898-1906 (2011)
- A. Ridolfo, R. Saija, S. Savasta, P. H. Jones, M.A. Iatì, and O. M. Maragò, *Fano-Doppler laser cooling of hybrid nanostructures*, ACS NANO vol. 5 issue 9, pages 7354-7361 (2011)
- C. Cecchi Pestellini, G. Mulas, S. Casu, M. A. Iatì, R. Saija, A. Cacciola, F. Borghese, P. Denti, *Modeling Galactic extinction*, AAPP, Atti dell'Accademia Peloritana dei Pericolanti, vol. 89, Suppl.1 (2011)
- S. Vasi, M.A. Monaca, M. G. Donato, F. Bonaccorso, G. Privitera, O.Trushkevych,, G. Calogero, B. Fazio, A.Irrera, M. A. Iatì, R. Saija, P. Denti, F. Borghese, P.H. Jones, A.C. Ferrari, P. G. Gucciardi, O. M. Maragò, *Optical trapping of carbon nanotubes and graphene*, AAPP, Atti dell'Accademia Peloritana dei Pericolanti, vol. 89, Suppl.1 (2011)
- A. Irrera; P. Artoni; R. Saija; et al., *Size-Scaling in Optical Trapping of Silicon Nanowires*\_ NANO LETTERS, 11, 4879-4884 (2011)
- F. Borghese, R. Saija, P.G. Gucciardi, M.A. Iatì, O.M. Maragò, *Electromagnetic and light scattering XIII*, preface to the special issue "Electromagnetic and light scattering by non-spherical particles XIII", JQSRT vol. 113, issue 18, p. 2277-2279 (2012)
- C. Cecchi-Pestellini, M.A. Iatì, D. A. Williams, *The nature of interstellar dust as revealed by light scattering*, special issue "Electromagnetic and light scattering by non-spherical particles XIII", JQSRT vol. 113, issue 18, p. 2310-2320 (2012)

- S.E. Skelton, M. Sergides, R. Saija, M.A. Iatì, O.M. Maragò, P.H. Jones, *Trapping volume control in optical tweezers using cylindrical vector beams*, Optics Letters vol. 38, p. 28-30 (2013)
- Magazzù, D. Spadaro, M.G. Donato, R. Sayed, E. Messina, C. D'Andrea, A. Foti, B. Fazio, M.A. Iatì, A. Irrera, R. Saija, P.G. Gucciardi, O.M. Maragò, *Optical tweezers: a non destructive tool for soft and biomaterial investigation*, Rend. Fis. Acc. Lincei, (2015)
- E. Messina, M.G. Donato, M. Zimbone, R. Saija, M.A. Iatì, L. Calcagno, M. E. Fragalà, G. Compagnini, C. D'Andrea, A. Foti, P.G. Gucciardi, O.M. Maragò, *Optical trapping of silver nanoplatelets*, Optics Express vol. 23, p. 8720-8730 (2015)
- V. Amendola, R. Saija, O. M. Maragò, M.A. Iatì, *Superior plasmon absorption in iron-doped gold nanoparticles*, Nanoscale, vol. 7 p. 8782-8792 (2015)
- D. Spadaro, M.A. Iatì, M.G. Donato, P.G. Gucciardi, R. Saija, A. R. Cherlakola, S. Scaramuzza, V. Amendola, O.M. Maragò, *Scaling of optical forces on Au-PEG core-shell nanoparticles*, RSC Advances, 2015, vol. 5, 93139 - 93146
- M.A. Iatì, E. Lidorikis, R. Saija, *Modeling of Enhanced Electromagnetic Fields in Plasmonic Nanostructures* in Handbook of Enhanced Spectroscopy, Pan Stanford Publishing, 2016 (Chapter 3, pagg. 101-139)
- B. Fazio, P. Artoni, M.A. Iatì, et al., *Strongly enhanced light trapping in a two-dimensional silicon nanowire random fractal array*, Light: Science and Applications, 2016, vol. 5, e16062, doi:10.1038/lisa.2016.62
- B. Fazio et al., *Coherent backscattering of Raman light*, Nature Photonics, vol. 11, pag. 170-176 (2017)
- A. Cacciola, M.A. Iatì, R. Saija, F. Borghese, P. Denti, O.M. Maragò, P.G. Gucciardi, *Spectral shift between the near-field and the far-field optoplasmonic response in gold nanospheres, nanoshells, homo- and hetero-dimers*, JQSRT 195 (2017), 97-106
- D. Spadaro, M.A. Iatì, et al., *Optical trapping of plasmonic mesocapsules: Enhanced optical forces and SERS*, The Journal of Physical Chemistry C, 121, 691-700 (2017)
- V. Amendola, R. Pilot, M. Frasconi, O.M. Maragò, M.A. Iatì, *Surface plasmon resonance in gold nanoparticles: a review*, Journal of Physics: Condensed Matter **29** (2017), 203002 (48 pp) DOI 10.1088/1361-648X/aa60f3 **1235 times cited on ISI Web of Science**
- M.A. Iatì, R. Saija, O.M. Maragò, P. Denti, Ferdinando Borghese (26 May 1940 - 19 January 2017), JQSRT 201 (2017), 226-228
- Maria Moffa, Andrea Camposeo, Vito Fasano, Barbara Fazio, Maria Antonia Iatì, Onofrio M. Maragò, Rosalba Saija, Heinz-Christoph Schröder, Werner E. G. Müller, and Dario Pisignano, *Biomaterial Amorphous Lasers through Light-Scattering Surfaces Assembled by Electrospun Fiber Templates*, Laser & Photonics Reviews 12, 1700224 (2018)
- M.G. Donato et al. , *Optical trapping and optical force positioning of two dimensional materials*, Nanoscale 10, 1245-1255 (2018)

- Yang Zhenhua, Moffa Maria et al., *Electrospun Conjugated Polymer/Fullerene Hybrid Fibers: Photoactive Blends, Conductivity through Tunnelling-AFM, Light-Scattering, and Perspective for Their Use in Bulk-Heterojunction Organic Solar Cells*, The Journal of Physical Chemistry C 122, 3058-3067 (2018)
- P. Polimeno, A. Magazzù, M.A. Iatì, F. Patti, R. Saija, C. Degli Esposti Boschi, M.G. Donato, P.G. Gucciardi, P.H. Jones, G. Volpe, O.M. Maragò, *Optical tweezers and their applications*, JQSRT 218, 131-150 (2018)
- F. Patti, R. Saija, P. Denti, G. Pellegrini, P. Biagioni, M.A. Iatì, O.M. Maragò, *Chiral optical tweezers for optically active particles in the T-matrix formalism*, Scientific Reports 9:29 (2019) DOI: 10.1038/s41598-018-36434-9
- P. Polimeno, R. Saija, C. Degli Esposti Boschi, O.M. Maragò, M.A. Iatì, *Optical forces in the T-matrix formalism*, AAPP, Atti dell'Accademia Peloritana dei Pericolanti vol. 97, No. 1, A2 (2019)
- G. Pellegrini, M. Finazzi, M. Celebrano, L. Duò, M.A. Iatì, O.M. Maragò, P. Biagioni, *Superchiral Surface Waves for All-Optical Enantiomer Separation*, J. Phys. Chem. C 123, 28336-28342 (2019)
- L. Pezzi, M.A. Iatì, R. Saija, A. De Luca, O.M. Maragò, *Resonant coupling and gain singularities in metal/dielectric multishells: Quasi-static versus T-matrix calculations*, J. Phys. Chem. C 123, 29291-29297 (2019)
- P. Polimeno, F. Patti, M. Infusino, J. Sanchez, M. A. Iatì, R. Saija, G. Volpe, O. M. Maragò, A. Veltri, *Gain-Assisted Optomechanical Position Locking of Metal/Dielectric Nanoshells in Optical Potentials*, ACS Photonics 7, 1262-1270 (2020)
- L. Romano, A. Portone, M.-B. Coltelli, F. Patti, R. Saija, M. A. Iatì, G. Gallone, A. Lazzeri, S. Danti, O. M. Marago, A. Camposeo, D. Pisignano, and L. Persano, *Intelligent non-colorimetric indicators for the perishable supply chain by non-wovens with photo-programmed thermal response*, Nature Communications 11, 5991 (2020)
- M.G. Donato, F. Patti, R. Saija, M.A. Iatì, P. G. Gucciardi, F. Pedaci, G. Strangi, O.M. Maragò, *Improved backscattering detection in photonic force microscopy near dielectric surfaces with cylindrical vector beams*, Journal of Quantitative Spectroscopy and Radiative Transfer 258, 107381 (2021)
- P. Polimeno, M.A. Iatì, C. Degli Esposti Boschi, S.H. Simpson, V. Svak, O. Brzobohaty, P. Zemanek, O.M. Maragò, R. Saija, *T-matrix calculations of spin-dependent optical forces in optically trapped nanowires*, The European Physical Journal Plus 136, 86 (2021), Focus Point on Light Pressure across All Scales
- P. Polimeno, A. Magazzù, M.A. Iatì, R. Saija, L. Folco, D. Bronte Ciriza, M.G. Donato, A. Foti, P.G. Gucciardi, A. Saidi, C. Cecchi-Pestellini, A. Jimenez Escobar, E. Ammannito, G. Sindoni, I. Bertini, V. Della Corte, L. Inno, A. Ciaravella, A. Rotundi, O.M. Maragò, *Optical tweezers in a dusty universe*.



*Modeling optical forces for space tweezers applications*, The European Physical Journal Plus, Focus Point on Light Pressure Across All Scales 136, 339 (2021)

- M.A. Iatì, R. Saija, L. Monsù Scolaro, C. Cecchi-Pestellini, *Life chooses homochirality: the role of cosmic dust in chiral selection*, Chapter 9, p. 173-194, in "Prebiotic Photochemistry. From Urey-Miller-like experiments to recent findings" editors Franz Saija and Giuseppe Cassone, Royal Society of Chemistry (2021)
- Volpe G., Maragò O.M, Rubinsztein-Dunlop H., et al. *Roadmap for optical tweezers*, Journal of Physics: Photonics 5 (2), 022501 (2023)
- Magazzù A., Bronte Ciriza D., Musolino A., Saidi A., Polimeno P., Donato M.G., Foti A., Gucciardi P.G., Iatì M.A., Saija R., Perchiazzi N., Rotundi A., Folco L., Maragò O.M., *Investigation of dust grains by optical tweezers for space applications*, The Astrophysical Journal, 942, 11 (2023)
- Bronte Ciriza D., Magazzù A., Callegari A., Barbosa G., Neves A., Iatì M.A., Volpe G., Maragò O.M., *Faster and more accurate geometrical-optics optical force calculation using neural networks*, ACS Photonics 10, 234-241 (2023)
- Rezaei S., Bronte Ciriza D., Hassanzadeh A., Kheirandish F., Gucciardi P.G., Maragò O.M., Saija R., Iatì M.A., *Faster calculations of optical trapping using neural networks trained by T-matrix data: An application to micro- and nanoplastics*, ACS Photonics 11, 8, 3424 (2024)

#### DISSEMINATION PAPERS

- Maria Antonia Iatì e Cesare Cecchi-Pestellini, *Un Universo Polveroso*, Sapere n. 5 (ottobre 2016) DOI: 10.12919/sapere.2016.05.2
- Cesare Cecchi-Pestellini e Maria Antonia Iatì, *La chimica che venne dal freddo*, Sapere n. 4 (agosto 2020) DOI: 10.12919/sapere.2020.04.4