



Dr. Rafael Omar Torres Mendieta

Assistant professor / Senior Researcher

I am the leader of the FEMTO-NANO group, which focuses on unveiling the most intricate details of the synthesis and study of nanomaterials using pulsed laser radiation (ns, ps, and fs). In addition, my interests also extend to the study of alternative "sustainable" pathways to build and analyze new materials for their implementation in catalysis, bacteria eradication, water treatment, energy storage and conversion, smart fluids, and drug delivery, among others.

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Liberec, Czech Republic

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www.researchgate.net/profile/Rafael-Torres-Mendieta-2

DETAILS

H-index: "13 according to WOS, 13 according to SCOPUS, and 16 according to Google Scholar "

ResearcherID: N7426-2018

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Scopus Author ID: 55102770000

Personal webpage: <https://femtonanogroup.com/>

LINK TO PHD THESIS

<https://www.tdx.cat/handle/10803/387325?locale-attribute=en#page=1>

WORK EXPERIENCE

Assistant Professor

Technical University of Liberec, Faculty of Science, Humanities and Pedagogy

03/2023 - Present

Liberec, Czech Republic

Senior Researcher

Institute for Nanomaterials, Advanced Technologies and Innovations at the Technical University of Liberec

05/2017 - Present

Liberec, Czech Republic.

Visiting Lecturer

Rajamangala University of Technology Thanyaburi

01/2023 - 02/2023

Pathumthani, Thailand.

Postdoctoral internship

Federal University of São Carlos

09/2019 - 03/2020

São Carlos, Brazil.

Postdoctoral researcher

University Jaume I

06/2016 - 05/2017

Castellón de la Plana, Spain.

Foreign researcher

University Jaume I

06/2013 - 06/2016

Castellón de la Plana Spain.

EDUCATION

Ph.D. in Applied Physics

University Jaume I / School of Technology and Experimental Sciences

06/2016

Courses

- Czech homologation at the Masaryk University on 17/12/2018
(Doctoral program in Chemistry P1417 D)

Castellón de la Plana, Spain.

M.Sc. (Optics)

Research Center in Optics (CIO)

07/2013

León Guanajuato, Mexico.

B. Sc. (Physics)

National Autonomous University of Mexico/ Faculty of Science

07/2011

Mexico City, Mexico.

ACADEMIC DISTINCTIONS

Supervisor of master thesis from ██████████ awarded the dean's prize of the Faculty of Mechatronics, Informatics, and Interdisciplinary Studies from the TUL. (06/2022)

Technical University of Liberec, Czech Republic.

EIT Jumpstarter first place (Raw Materials) (12/2021)

European Institute of Innovation and Technology, Europe.

Supervisor of master thesis from ██████████ awarded the TUL's rector prize for the best thesis 2021. (06/2021)

Technical University of Liberec, Czech Republic.

Supervisor of bachelor thesis from ██████████ awarded the TUL's rector prize for the best thesis 2019. (06/2019)

Technical University of Liberec, Czech Republic.

Recognition of academic excellence during the studies of Master in Science for the period September 2011 - December 2011 and best note of the generation 2011-2013 (06/2013)

Research Center in Optics (CIO), Mexico.

Co-supervisor of bachelor thesis from ██████████ awarded the dean's prize of the Faculty of Mechatronics, Informatics, and Interdisciplinary Studies from the TUL. (06/2022)

Technical University of Liberec, Czech Republic.

Honorable mention within the CRYTUR 2021 Awards for being the supervisor of one of the best diploma theses in material sciences in the Czech Republic and Slovakia. (12/2021)

CRYTUR, Czech Republic.

First place of the ANGEL Decennial award, category best image related to ANGEL research, 01 December 2020. Hefei, China. (12/2020)

ANGEL conference 2020, China.

Dr. Tasilo Prnka Prize for authors under 33 at the conference NANOCON 2016 (10/2016)

NANOCON conference 2016, Czech Republic.

Award for the best poster presentation of research work in nanoscience. (05/2011)

NANOTECH conference 2011, Mexico.

LIST OF PUBLISHED PAPERS

1. O. Havelka, F. Yalcinkaya, S. Wacławek, V. V.T. Padil, M. V. Ramesh, M. Černík, V. Amendola, and R. Torres-Mendieta, "Sustainable development of PVDF-OH Ag/TiO_x nanocomposites for simultaneous oil/water separation and pollutant degradation under pilot conditions". *Submitted Manuscript*

3. M. Cvet, Martin, T. Jamatia, P. Suly, M. Urbánek and R. Torres-Mendieta, "Stable Magnetorheological Fluids Containing Bidisperse Fillers with Compact/Mesoporous Silica Coatings". *International Journal of Molecular Sciences*, 2022, 23, pp 11044. IF = 6.208

5. D. Ettel, O. Havelka, S. Isik, D. Silvestri, S. Wacławek, M. Urbánek, V. V. Padil, M. Černík, F. Yalcinkaya and R. Torres-Mendieta, "Laser-synthesized Ag/TiO_x nanoparticles to integrate catalytic pollutant degradation and antifouling enhancement in nanofibrous membranes for oil-water separation". *Applied Surface Science*, 2021, 564, pp 150471. IF = 7.392

7. O. Havelka, M. Cvet, M. Urbánek, D. Łukowiec, D. Jašíková, M. Kotek, M. Černík, V. Amendola and R. Torres-Mendieta, "On the Use of Laser Fragmentation for the Synthesis of Ligand-Free Ultra-Small Iron Nanoparticles in Various Liquid Environments". *Nanomaterials*, 2021, 11, pp 1538. IF = 5.719

9. D. Silvestri, S. Wacławek, B. Sobel, R. Torres-Mendieta, M. Pawlyta, V. V. Padil, J. Filip and M. Černík, "Modification of nZVI with a bio-conjugate containing amine and carbonyl functional groups for catalytic activation of persulfate". *Separation and Purification Technology*, 2021, 257, pp 117880. IF = 9.136

2. R. Torres-Mendieta, N. H. A. Nguyen, A. Guadagnini, J. Semerad, D. Łukowiec, P. Parma, J. Yang, S. Agnoli, A. Sevcu, T. Cajthaml, M. Cernik and V. Amendola, "Growth suppression of bacteria by biofilm deterioration using silver nanoparticles with magnetic doping". *Nanoscale*, 2022, 14, pp 18143-18156. IF = 8.307

4. V.V. T. Padil, K. P. A. Kumar, S. Murugesan, R. Torres-Mendieta, S. Wacławek, J. Y. Cheong, M. Černík and R. S. Varma, "Sustainable and safer nanoclay composites for multifaceted applications". *Green Chemistry*, 2022, 24, pp 3081-3114. IF = 11.034

6. D. Silvestri, K. Krawczyk, M. Pawlyta, M. Krzywiecki, V. V. Padil, R. Torres-Mendieta, F. Ghanbari, O. Dinc, M. Černík, D. D. Dionysiou and S. Wacławek, "Influence of catalyst zeta potential on the activation of persulfate". *Chemical Communications*, 2021, 57, pp 7814-7817. IF = 6.065

8. K. A. Kumar, E. N. Zare, R. Torres-Mendieta, S. Wacławek, P. Makvandi, M. Černík, V. V. Padil and R. S. Varma, "Electrospun fibers based on botanical, seaweed, microbial, and animal sourced biomacromolecules and their multidimensional applications". *International Journal of Biological Macromolecules*, 2021, 171, pp 130-149. IF = 8.025

10. R. Torres-Mendieta, M. M. Teixeira, G. Mínguez-Vega, D. de Souza, Y. G. Gobato, M. Assis, H. Beltrán-Mir, E. Cordónillo, J. Andrés, M. Černík and E. Longo, "Toward Expanding the Optical Response of Ag₂CrO₄ and Bi₂O₃ by Their Laser-Mediated Heterojunction". *The Journal of Physical Chemistry C*, 2020, 124, pp 26404-26414. IF = 4.177

LIST OF PUBLISHED PAPERS

11. V. V. Padil, J. Y. Cheong, K. P. AkshayKumar, P. Makvandi, E. N. Zare, R. Torres-Mendieta, S. Wacławek, M. Černík, I.-D. Kim, R. S. Varma, "Electrospun fibers based on carbohydrate gum polymers and their multifaceted applications". *Carbohydrate Polymers*, 2020, 247, pp 116705. IF = 10.723
13. M. Cvek, R. Torres-Mendieta, O. Havelka, M. Urbanek, T. Plachy and M. Cernik, "Laser-induced fragmentation of carbonyl iron as a clean method to enhance magnetorheological effect". *Journal of Cleaner Production*, 2020, 254, pp 120182. IF = 11.072
15. M. Assis, T. Robredo, C. C. Foggi, A. M. Kubo, G. Mínguez-Vega, E. Condón, H. Beltrán-Mir, R. Torres-Mendieta, J. Andrés, M. Oliva, C. E. Vergani, P. A. Barbugli, E. R. Camargo, R. C. Borra and E. Longo, "Ag nanoparticles/a-Ag₂WO₄ composite formed by electron beam and femtosecond irradiation as potent antifungal and antitumor agents". *Scientific Reports*, 2019, 9, pp 1-15. IF = 4.996
17. D. Silvestri, J. Mikšíček, S. Wacławek, R. Torres-Mendieta, V. V. Padil, and M. Černík, "Production of electrospun nanofibers based on graphene oxide/gum Arabic". *International Journal of Biological Macromolecules*, 2019, 124, pp 396-402. IF = 8.025
19. D. Silvestri, S. Wacławek, B. Sobel, R. Torres-Mendieta, V. Novotný, N. H. Nguyen, A. Ševců, V. V. T. Padil, J. Müllerová, M. Stuchlík, M. P. Papini, M. Černík, and R. S. Varma, "A poly (3-hydroxybutyrate)-chitosan polymer conjugate for the synthesis of safer gold nanoparticles and their applications". *Green Chemistry*, 2018, 20, pp 4975-4982. IF = 11.034
21. V. García-Sanz, V. Paredes-Gallardo, C. Bellot-Arcís, L. Martínez-León, R. Torres-Mendieta, J. Montero and A. Albaladejo, "Femtosecond laser settings for optimal bracket bonding to zirconia". *Lasers in Medical Science*, 2018, 34, pp 297-304. IF = 2.555
23. C. Doñate-Buendía, R. Torres-Mendieta, A. Pyatenko, E. Falomir, M. Fernández-Alonso, and G. Mínguez-Vega, "Fabrication by Laser Irradiation in a Continuous Flow Jet of Carbon Quantum Dots for Fluorescence Imaging". *ACS Omega*, 2018, 3, pp 2735-2742. IF = 4.132
25. R. Torres-Mendieta, R. Mondragón, V. Puerto-Belda, O. Mendoza-Yero, J. Lancis, J. E. Juliá, and G. Mínguez-Vega, "Characterization of tin/ethylene glycol solar nanofluids synthesized by femtosecond laser radiation". *ChemPhysChem*, 2016, 18, pp 1055-1060. IF = 3.52
27. R. Mondragón, R. Torres-Mendieta, M. Meucci, G. Mínguez-Vega, J. E. Juliá, and E. Sani, "Synthesis and characterization of gold/water nanofluids suitable for thermal applications produced by femtosecond laser radiation". *Journal of Photonics for Energy*, 2016, 6, pp 034001. IF = 1.729
29. R. Torres-Mendieta, R. Mondragón, E. Juliá, O. Mendoza-Yero, E. Cordoncillo, J. Lancis and G. Mínguez-Vega, "Fabrication of gold nanoparticles in Therminol VP-1 by laser ablation and fragmentation with fs pulses". *Laser Physics Letters*, 2014, 11, pp 126001. IF = 1.704
12. R. Torres-Mendieta, F. Yalcinkaya, E. Boyraz, O. Havelka, S. Wacławek, J. Maryška, M. Černík and M. Bryjak, "PVDF nanofibrous membranes modified via laser-synthesized Ag nanoparticles for a cleaner oily water separation". *Applied Surface Science*, 2020, 526, pp 146575. IF = 7.392
14. S. Wacławek, D. Silvestri, P. Hrabák, V. V. Padil, R. Torres-Mendieta, R., M. Wacławek, M. Černík and D. D. Dionysiou, "Chemical oxidation and reduction of hexachlorocyclohexanes: A review". *Water Research*, 2019, 162, pp 302-319. IF = 13.4
16. P. S. Lemos, G. S. Silva, R. A. Roca, M. Assis, R. Torres-Mendieta, H. Beltrán-Mir, G. Mínguez-Vega, E. Cordoncillo, J. Andrés and E. Longo, "Laser and electron beam-induced formation of Ag/Cr structures on Ag₂CrO₄". *Physical Chemistry Chemical Physics*, 2019, 21, pp 6101-6111. IF = 3.945
18. R. Torres-Mendieta, O. Havelka, M. Urbánek, M. Cvek, S. Wacławek, V. V. T. Padil, D. Jasíková, M. Kotek, and M. Černík, "Laser-assisted synthesis of Fe-Cu oxide nanocrystals". *Applied Surface Science*, 2018, 469, pp 1007-1015. IF = 7.392
20. M. Assis, N. G. Macedo, T. R. Machado, M. M. Ferrer, A. F. Gouveia, E. Cordoncillo, R. Torres-Mendieta, H. Beltrán-Mir, G. Mínguez-Vega, E. R. Leite, J. R. Sambrano, J. Andrés, and E. Longo, "Laser/Electron Irradiation on Indium Phosphide (InP) Semiconductor: Promising Pathways to In Situ Formation of Indium Nanoparticles". *Particle and Particle Systems Characterization*, 2018, pp 1800237. IF = 3.467
22. M. Assis, E. Cordoncillo, R. Torres-Mendieta, H. Beltrán-Mir, G. Mínguez-Vega, A. F. Gouveia, E. Leite, J. Andrés, and E. Longo, "Laser-induced formation of bismuth nanoparticles". *Physical Chemistry Chemical Physics*, 2018, 20, pp 13693-13696. IF = 3.945
24. M. Assis, E. Cordoncillo, R. Torres-Mendieta, H. Beltrán-Mir, G. Mínguez-Vega, R. Oliveira, E. R. Leite, C. C. Foggi, C. E. Vergani, E. Longo, and J. Andrés, "Towards the scale-up of the formation of nanoparticles on a-Ag₂WO₄ with bactericidal properties by femtosecond laser irradiation". *Scientific Reports*, 2018, 8, pp 1884. IF = 4.996
26. R. Torres-Mendieta, D. Ventura-Espinosa, S. Sabater, J. Lancis, G. Mínguez-Vega, and J. A. Mata, "In situ decoration of graphene sheets with gold nanoparticles synthetized by pulsed laser ablation in liquids". *Scientific Reports*, 2016, 6, pp 30478. IF = 4.996
28. R. Torres-Mendieta, R. Mondragón, E. Juliá, O. Mendoza-Yero, J. Lancis, G. Mínguez-Vega, "Fabrication of high stable gold nanofluid by pulsed laser ablation in liquids". *Advanced Materials Letters*, 2015, 6, pp 1037-1042. IF = N/A
30. A. Franco, R. Torres-Mendieta, E. Alvarez-Zazuco and J. A. García-Macedo, "Effect of nanostructures on corona poling assisted second harmonic generation in hybrid organic-inorganic films". *Advanced Materials Research*, 2014, 976, pp 251. IF = N/A

LIST OF PUBLISHED PROCEEDINGS

1. O. Havelka, J. Braun, S. Abdallah, and R. Torres-Mendieta, "Laser-assisted control of bismuth doping in magnetic nanoparticles". *Proceedings of the 14th International Conference on Nanomaterials - Research & Application*, 2022, In press.
3. K. Krawczyk, S. Wacławek, D. Silvestri, R. Torres-Mendieta, V. T. Padil, M. Rezanka and M. Černík, "Synergistic effect of nano zero-valent iron and cyclodextrins: A nano-structure for water purification". *Proceedings of the 11th International Conference on Nanomaterials - Research & Application*, 2019, pp 279-286.
5. R. Torres-Mendieta, D. Ventura-Espinosa, S. Sabater, J. Lancis, J. A. Mata and G. Mínguez-Vega, "In-situ metal nanoparticle decoration on graphene sheets by Pulsed Laser Ablation in Liquids". *Proceedings of the 2017 European Conference on Lasers and Electro-Optics*, 2017, pp CM_P_26.
2. D. Ettel, O. Havelka, S. Isik, F. Yalcinkaya and R. Torres-Mendieta, "Expansion of optical properties in TiO_x nanoparticles by their laser-mediated alloying with Ag". *Proceedings of the 12th International Conference on Nanomaterials - Research & Application*, 2020, pp 109-115.
4. C. Doñate-Buendía, R. Torres-Mendieta, A. Pyatenko, E. Falomir, M. Fernández-Alonso and G. Mínguez-Vega, "Fluorescence cell imaging using carbon quantum dots generated by continuous fragmentation". *Proceedings of Synthesis and Photonics of Nanoscale Materials XVI*, 2019, 10907, pp 47-52.
6. R. Torres-Mendieta, R. Mondragón, V. Puerto-Belda, O. Mendoza-Yero, J. Lands, J. E. Juliá and G. Mínguez-Vega, "Synthesis of tin based volumetric absorber nanofluid by femtosecond laser radiation". *Proceedings of the 2017 Conference on Lasers and Electro-Optics Europe & European Quantum Electronics Conference (CLEO/Europe-EQEC)*, 2017, pp 1-1.

LIST OF PUBLISHED PROCEEDINGS

7. R. Torres-Mendieta, R. Mondragón, V. Puerto-Belda, O. Mendoza-Yero, P. Andrés, J. Lancis, G. Mínguez-Vega and E. Juliá, "In situ fabrication of a solar nanofluid by a femtosecond laser ablation of tin in ethylene glycol". *AIP Conference Proceedings*, 2017, 1850, pp 070006.

9. A. Franco, R. Torres-Mendieta and J. A. García-Macedo, "Corona poling assisted second harmonic generation in nanostructured polymethylmethacrylate films". *Proceedings of the 22nd International Commission for Optics: Light for the Development of the World*, 2011, 8011, pp 907-916.

8. R. Torres-Mendieta, R. Mondragón, J. E. Juliá, O. Mendoza-Yero, P. Andrés and J. Lancis, "Enhancement of properties in heat transfer fluids by in-situ fabrication of gold nanoparticles by pulse laser ablation in liquid". *Proceedings of the 2015 European Conference on Lasers and Electro-Optics*, 2015, pp CM_P_4.

PEDAGOGICAL ACTIVITIES

Invited Lecturer

Laser-mediated synthesis of nanomaterials

01/2023

Rajamangala University of Technology Thanyaburi

Co-supervisor of Ph.D. thesis, [REDACTED]

Morphological manipulation of laser-synthesized nanoparticles: the ultimate frontier in laser synthesis of nanocolloids

08/2022

Technical University of Liberec.

Supervisor of master thesis, [REDACTED]

Design and automation of experimental laser ablation operation system for affordable and competitive nanoparticle production

08/2022

Technical University of Liberec.

Supervisor of master thesis, [REDACTED] (winner of the Dean's award of the Faculty of Mechatronics, Informatics and Interdisciplinary Studies from the TUL)

Control of elemental distribution of laser synthesized Pd/FeOx nanoparticles

04/2022

Technical University of Liberec.

Co-supervisor of bachelor thesis, [REDACTED] (winner of the Dean's award of the Faculty of Mechatronics, Informatics and Interdisciplinary Studies from the TUL)

Control of the quantitative elemental composition of laser-synthesized gold-nickel nanocolloids

04/2022

Technical University of Liberec.

Co-supervisor of Ph.D. thesis, [REDACTED]

Laser Modified Electrospun Nanofiber Membranes for improving microbial fuel cell components

06/2021 - Present

Technical University of Liberec.

Co-supervisor of Ph.D. thesis, [REDACTED]

Composition control of laser-generated bimetallic NPs usable as catalysts

06/2021 - present

Technical University of Liberec.

Supervisor of master thesis, [REDACTED] (winner of the Czech Republic's Minister of Education Award for outstanding results in the field of nanomaterials 2021 and winner of the TUL's Rector award for the best thesis 2021)

Laser-generated synthesis of Pd-Ni nanoalloys usable as catalysts

04/2021

Technical University of Liberec.

Invited Lecturer

Laser-mediated Synthesis of Nanomaterials: a Clean Pathway

02/2020

Federal University of São Carlos.

Opponent of master thesis, [REDACTED]

Molybdenum disulfide and molecular thin films integration into devices for molecular electronics and spintronics

04/2019

Technical University of Liberec.

Ph.D. thesis committee member, [REDACTED]

On the use of nanofluids to enhance the direct absorption of solar radiation

07/2019

University Jaume I.

Supervisor of bachelor thesis, [REDACTED] (winner of the Czech Republic's Minister of Education Award for outstanding results in the field of nanomaterials 2019, and winner of the TUL's Rector award for the best thesis 2019)

Laser-mediated synthesis of iron nanoclusters

08/2018 - 04/2019

Technical University of Liberec.

Lecturer of the class

Functionalization of Nanomaterials

02/2018 - present

Technical University of Liberec.

Lecturer of seminars

Nanomaterials synthesis, functionalization of nanomaterials and optics

06/2014 - 04/2017

University Jaume I.

PROJECTS

Sustainable Remediation of Radionuclide Impacts on Land and Critical Materials Recovery (01/2023 - 12/2025)

□ Senior Researcher

LANDAU-WATER: Laser-assembled recyclable nanocatalysts towards degradation of antibiotics unwanted in water bodies (02/2022 - Present)

□ Senior Researcher and Co-supervisor of the student granted the project

Nanomaterials and nanotechnologies for environmental protection and a sustainable future (01/2020 - Present)

□ Senior Researcher

PROJECTS

Laser-assisted synthesis of ultra-fine nanoparticles for catalytic applications (05/2020 - 12/2020)

▫ Leader

Porous biological 2D membranes and 3D structures built from polysaccharides of functionalized vegetable gums and their environmental applications (01/2020 - 12/2022)

▫ Senior Researcher

Study of the roles of ferrates and modified nanoiron in the activation process of persulphates (01/2019 - 12/2022)

▫ Senior Researcher

FEMTO-MEMBRANE: Femtosecond laser-mediated synthesis of nanoalloys to improve membranes for oil/water separation (01/2019 - 12/2019)

▫ Senior Researcher and Supervisor of the student granted the project

Hybrid materials for hierarchical structures (01/2018 - 12/2022)

▫ Senior Researcher

National Program for Sustainability I (NPU) (05/2017 - 12/2018)

▫ Senior Researcher

Application of the spatial and temporal conformation of ultrashort pulses to the generation of non-linear optical effects (01/2014 - 12/2016)

▫ Researcher

Santiago Grisolía scholarship (06/2013 - 07/2016)

▫ Researcher

EDITORIALSHIP AND GRANT EVALUATION

Chemical Engineering Journal (5)

Elsevier

Scripta Materialia (1)

Elsevier

Optics and Laser Technology (9)

Elsevier

ACS Applied Materials & Interfaces (1)

ACS

Nanomaterials (2)

MDPI

Materials (9)

MDPI

Nanomanufacturing (3)

MDPI

Atmosphere (2)

MDPI

Evaluator of grant proposals (2019)

National Science Centre panel ST8, Poland

Member of review editorial board (09/2022 - Present)

Frontiers in Chemical Biology

Journal of Hazardous Materials (1)

Elsevier

Applied Surface Science (4)

Elsevier

Results in Engineering (3)

Elsevier

The Journal of Physical Chemistry A (1)

ACS

Catalysts (3)

MDPI

Micromachines (4)

MDPI

Molecules (4)

MDPI

Recent Patents in Nanotechnology (1)

Bentham Science

Editor of the Special Issue (09/2021 - 11/2022)

"Surface and Interface Engineering of Polymer Membranes" in the journal Membranes.

Editor of the Special Issue (01/2023 - 06/2023)

"Surface and Interface Engineering of Membrane Composites" in the journal Membranes.

INTERNATIONAL ACTIVITIES

Invited speaker at the "ANGEL satellite event Innovative biomedical applications of laser-generated colloids" (02/2023 - 02/2023)

Bacterial growth suppression by biofilm deterioration through magnetic element-doped silver nanoparticles.

Invited speaker and session chairman in Dubai at the "2nd Global Summit and Expo on Materials Science and Nanoscience (GSEMSN2022)" (10/2022 - 10/2022)

Laser-assisted generation of ultra-small iron nanoparticles.

Mentor and commentator at the Bangkok International Intellectual Property, Invention, Innovation and Technology Exposition (IPITEEx 2023) (02/2023 - 02/2023)

National Research Council of Thailand

Participation in EIT Jumpstarter - 1st prize winner

(09/2021 - 12/2021)

Raw Materials category.

INTERNATIONAL ACTIVITIES

Invited speaker in Turkey at the "2nd International Conference on Nanomaterials, Nanofabrication, and Nanocharacterization (NANOMACH)" (10/2021 - 10/2021)

Laser-mediated fabrication of nanoparticles for the decoration of nanofibrous membranes and their usage in the oil/water separation sector.

Course given at foreign institution entitled "Laser-mediated Synthesis of Nanomaterials: a Clean Pathway" (02/2020)

Federal University of São Carlos, Brazil.

Long-term collaboration with Prof. Honoris Causa, Elson Longo (h-index:83, joint publications: 6)

Federal University of São Carlos, Brazil.

Collaboration with Vincenzo Amendola (h-index: 39, joint publications: 2 published 1 under review)

University of Padova, Italy.

Collaboration with Dr. Dariusz Łukowiec (h-index:11, joint publications: 1)

Silesian University of Technology, Poland.

General Chairman of the International OSA Network of Students (IONS) congress (09/2015 - 09/2015)

Valencia, Spain.

Participation in student outreach science groups known as Student Chapters from the Optical Society of America, the International Society for Optics and Photonics, and the European Physical Society (06/2011 - 06/2016)

OPTICA (formerly OSA).

Talk and participation in China at the "6th International Conference on Advanced Nanoparticle Generation & Excitation by Lasers in Liquids (ANGEL2021)" and Decennial awards. (06/2021 - 06/2021)

Laser-mediated Ag nanoparticle decoration of PVDF nanofibrous membranes for an efficient oil/water separation.

Invited lecturer of the seminar "Laser-induced synthesis of nanomaterials" (02/2020)

Federal University of São Carlos, Brazil.

Long-term collaboration with Prof. Gladys Mínguez Vega (h-index: 17, joint publications: 15)

University Jaume I, Spain.

Collaboration with Prof. Alexander Pyatenko (h-index:22, joint publications: 1)

National Institute of Advanced Industrial Science and Technology, Japan.

Member of the general IONS planning committee for events worldwide in 2016 (2016)

OPTICA formerly (OSA).

Invited speaker "Nanoscience in our days" (08/2014)

College of Sciences and Humanities Campus Naucalpan Mexico (UNAM), Mexico.

LANGUAGES

Spanish (C2)

Native or Bilingual Proficiency

English (C1) IELTS-2019

Full Professional Proficiency

Czech (A1)

Elementary Proficiency

Portuguese - basics

Elementary Proficiency

ADDITIONAL CERTIFICATES

Laser safety training certification for employees working with lasers class 3B and 4

HILASE Center, Institute of Physics of the ASCR, v.v.i.

Czech Republic.