

## VIRGIL-FLORIN DUMA

### Curriculum Vitae

<https://www.webofscience.com/wos/author/record/B-3031-2010>  
[https://www.researchgate.net/profile/Virgil-Florin\\_Duma](https://www.researchgate.net/profile/Virgil-Florin_Duma)



#### EDUCATION

- **Habilitation** in Mechanical Engineering, Mechatronics and Robotics (Ministry Order 166/07.04.2014). Thesis: Optomechatronic Modulators: Choppers, Attenuators and Scanners. Analysis and Design-defended Oct. 2013 (following the original LEN 1/2011 standards) at the *Polytechnic Univ. of Bucharest (UPB)*, Romania. Commission: President, Prof. Valentin I. Vlad (President of the Romanian Academy); Members, Prof. Nicolae Puscas (UPB), Prof. Jean-Pierre Huignard (Institute Lavoisier, France), Dr. Giuliano Perrone (Univ. of Turin, Italy);
- **Postdoctoral Fulbright Senior Stage** in Applied Physics (Optics), at *The Institute of Optics, Univ. of Rochester, NY, USA*; Supervisor, Prof. Jannick P. Rolland (USA); 2009-2010;
- **PhD** in Engineering Sciences, *cum laude* (Ministry Order 5285/28.12.2001), *Polytechnic Univ. of Timisoara* (Romania). Thesis: Contributions to the Analysis and Design of Scanning Systems; Supervisor, Prof. Dan Perju; 1994-2001;
- **Diploma Engineer** (equivalent to **M.Sc.**) in Mechanical Engineering (Fine Mechanics & Optics), *valedictorian* (admitted & graduated top of the class - approx. 140 students), major in Measuring and Control Apparatuses (30.07.1991), *Polytechnic Univ. of Timisoara* (Romania), GPA **9.84/10**, with 10/10 for the Diploma thesis: Three-chromatic Colorimeter with Mix Synthesis; Supervisor, Prof. Ioan Mihalca; 1986-1991;
- Military Service: Sept. 1985-June 1986;
- *Moise Nicoara National College for Mathematics and Physics*, Arad (Romania), graduated with the first GPA at the maturity exam per college: **9.66/10**, 1981-1985.

#### SOCIAL STATUS

Born: July 4, 1967 in Arad, Arad County, Romania;  
Nationality and citizenship: Romanian. Religion: Christian Ortodox;  
Married: since 1999; two children.

#### LANGUAGES

- **English:** fluent; 1994 TOEFL Exam Score **627/640**;
- **Romanian:** native; **French:** very good; **Italian:** beginner.

**TEACHING & RESEARCH** (33 years of experience): Measuring Systems; Optomechatronics & Optical Systems; Biomedical Imaging; Mechanisms & Theory of Machines; Quality Engineering.

#### POSITIONS

- **Researcher**, 2024-Present, Center of Research and Development for Mechatronics (CETTI), *National University of Science and Technology POLITEHNICA Bucharest* (Romania);
- **Adjunct Professor (for Optics Master Courses-in English)**, 2016-Present, Faculty of Dental Medicine, *Victor Babes Univ. of Medicine and Pharmacy Timisoara* (Romania); [Emdola Master](#);
- **Researcher**, 2015-Present, Research Center in Dental Medicine Using Conventional and Alternative Technologies, Department of Prostheses Technology and Dental Materials, Faculty of Dental Medicine, "*Victor Babes*" *University of Medicine and Pharmacy of Timisoara* (Romania);
- **Adjunct Professor (PhD Advisor)**, 2014-Present, *Polytechnic Univ. of Timisoara* (Romania); [http://www.upt.ro/2018-2019/admitere/doctorat/2019\\_Duma\\_Virgil\\_Florin.pdf](http://www.upt.ro/2018-2019/admitere/doctorat/2019_Duma_Virgil_Florin.pdf);
- **Adjunct Professor (for Master Courses-in English)**, 2014-2015, Faculty of Physics, *West Univ. of Timisoara* (Romania);
- **Visiting Scientist**, March 1, 2013-Present, **Fulbright Senior Research Fellow**, Sept. 25, 2009-June 20, 2010 (sabbatical year), [ODALab](#), [The Institute of Optics](#) (#1 in Optics and #4 in Applied Physics in the USA), [Univ. of Rochester, NY \(ODALab\)](#), Host: [Prof. Jannick P. Rolland](#) (USA);
- **Ministry Counselor**, March-May 2012;

- **Honorary Professor** & member of the Elliot College, 2020-Present, **Visiting Senior Research Fellow**, 2009-2019, at the School of Physical Sciences ([People - Applied Optics Group - Research at Kent](#)), [Univ. of Kent](#), Canterbury, Host: [Prof. Adrian Gh. Podoleanu](#) (UK);
- **Head and founder of the 3OM Research Group** (in *Opto-Mechatronics, Opto-Mechanics and Optical Metrology*), <http://3om-group-optomechanics.ro/> and of the Laboratories of Optomechanics and Biomedical Photonics at the *Aurel Vlaicu Univ. Arad*; <https://erris.gov.ro/3OMGroup>, 2008-Present;
- **Professor**, 2006-Present, **Associate Professor**, 2002-2006, **Lecturer**, 1999-2002, Dept. of Product Design, Faculty of Engineering, *Aurel Vlaicu Univ. of Arad* (Romania);
- **Lecturer**, 1997-2001, **Teaching & Research Assistant**, 1991-1997, Dept. of Mechatronics (Chair of Fine Mechanics & Optics), Faculty of Mechanical Engineering, *Polytechnic Univ. of Timisoara* (Romania);

## OTHER POSITIONS

- **2024-2025, Guest Editor** of a Special Issue (SI) of *J. of Clinical Medicine* (eISSN 2077-0383), **IF 3/2023, Q1**, [Interdisciplinary Approach on the Oral Cavity Management Due to Musculoskeletal Conditions](#);
- **2023-Present, Guest Editor** of a SI of [Optical and Quantum Electronics](#) (eISSN 1572-817X) **IF 3, Q2**: "[Optical Physics in Advanced Optical Imaging for Healthcare 4.0 \(springer.com\)](#)"
- **2023-2024, Guest Editor** of a SI of *Sensors* (ISSN 1424-8220), **IF 3.4/2023, Q2**, [Laser Scanning and Applications](#);
- **2021-Present, Editorial Board Member** (<https://www.mdpi.com/materials/editorialboard>) of *Materials* (ISSN 1996-1944), **IF 3.1/2023, Q1**;
- **2021-Present, Editorial Board Member** (<https://www.mdpi.com/photonics/editorialboard>) of *Photonics* (ISSN 2304-6732), **IF 2.1/2023, Q2**; **2020, Section Board Member** of [Optoelectronics and Optical Materials](#);
- **2021-Present, Topical Advisory Panel Member** of *Sensors* (ISSN 1424-8220), **IF 3.9, Q2**;
- **2021, Editorial Board Member** of [Frontiers in Bioscience-Landmark \(imrpess.com\)](#) (ISSN 1093-4715), **IF 3.1, Q2**, <https://www.fbscience.com/Landmark/editorial-board>;
- **2020-Present, Guest Editor** of a Topical Collection of *Medicina-Lithuania* (ISSN 1648-9144), **IF 2.4/2023, Q1**, [New Concepts for Dental Treatments and Evaluations](#);
- **2020-2024, Guest Editor** of SIs of *Applied Sciences* (ISSN 2076-3417), **IF 2.5/2023, Q1**, [Recent Advances in Optomechanics; Progress in 3OM: Opto-Mechatronics, Opto-Mechanics, and Optical Metrology](#);
- **2020-Present, Guest Editor** of SIs of *Photonics* (ISSN 2304-6732), **IF 2.1/2023, Q2**, [Advances in 3OM: Opto-Mechatronics, Opto-Mechanics, and Optical Metrology](#); [Recent Advances in Optical Coherence Tomography](#); [Advances in 3OM: Opto-Mechatronics, Opto-Mechanics, and Optical Metrology, 2nd Edition](#)
- **2019-Present, Guest Editor** of a Topical Collection of *Materials* (ISSN 1996-1944), **IF 3.1/2023, Q1**: [Materials Investigations in Mechanical Systems](#);
- **2019-Present, Guest Editor** of SIs of *Materials* (ISSN 1996-1944), **IF 3.1/2023, Q1**: [Biocompatible Materials Investigated with Optical Methods](#); [Advanced Optical Methods for Materials Sciences](#); [Biomedical Materials Investigated with Optical Methods](#);
- **2016-Present, Editorial Board Member** of *J of Adhesion Sci and Technology* (Taylor & Francis), **IF 2.3, Q3**;
- **2019-Present, OPTICA Visiting Lecturer** (Optical Society of America, USA, <https://www.optica.org/>);
- **2014-Present, SPIE Visiting Lecturer** (Int. Soc. for Optics and Photonics, USA, <https://spie.org/>);
- **2016-2018, 2020-2024, Member** of [CNATDCU](#) (Romanian National Council for the Validation of University Titles, Diplomas, and Certificates)-[Commission of Mechanical Engineering, Mechatronics, and Robotics](#);
- **2016-2017, Member** of [CNCS](#) (National Research Council)-<http://www.cncs-nrc.ro/stiinte-ingineresti/>;
- **2013-Present, Director**, *Research Center in Mechanical Engineering, Aurel Vlaicu Univ. Arad*;
- **2008-2011, Vice Dean for Research**, Faculty of Engineering, *Aurel Vlaicu Univ. Arad*;
- **2005-2009, Editor-in-Chief** (and founder), *Sc. and Tech. Bull. of the Aurel Vlaicu Univ. of Arad, Series: Mech. Eng.*, [www.uavsb.xhost.ro](http://www.uavsb.xhost.ro), recognized by the Romanian National University Research Council since 2006;
- **2004-2006: Scientific Secretary**, Dept. of Product Design, *Aurel Vlaicu Univ. of Arad*;
- **1999-Present, Head** of the Mechanisms Laboratory at the *Aurel Vlaicu Univ. of Arad*;

## SCIENTIFIC PAPERS (*h-index*=25, *ISI WoS*) [https://www.researchgate.net/profile/Virgil-Florin\\_Duma](https://www.researchgate.net/profile/Virgil-Florin_Duma)

321 published papers (66 as sole author, 59 as first, and 196 as co-author) - from which 199 in ISI WoS:

69 in WoS peer-reviewed journals with impact factor ( $\Sigma IF$ ) > 145; 52 in other peer-reviewed journals;  
124 proceedings papers indexed in ISI Web of Science; 67 in other conference proceedings.

2 Romanian (OSIM) patents awarded + 2 patents applications under review

<https://www.webofscience.com/wos/author/record/B-3031-2010>

<https://www.scopus.com/authid/detail.uri?authorId=9839230700> (*h-index*=26, *Scopus*)

<https://orcid.org/0000-0001-5558-4777>

<https://scholar.google.com/citations?user=gBRLlfcAAAAJ&hl=en&oi=ao> (*h-index=27, GS*)

<https://www.brainmap.ro/virgil-florin-duma>

> 45 Invited Lectures at conferences or universities

+ 110 oral presentations or posters at conferences without published proceedings.

**CITATIONS** (Sept. 2024): >701 in ISI Web of Science; >750 in Google Scholar (both excluding self-citations).

## BOOKS & BOOKS CHAPTERS

2 scientific books / monographs (sole author);

2 university courses (co-author);

9 books as editor (2 laboratory books, 5 ISI Proc., 2 Proc.);

3 laboratory books (sole or co-author);

## INVITED LECTURES & PRESENTATIONS (21 at Int. Conf., 14 at Int. Universities, and 16 at Nat. Conf.)

### ➤ At International Conferences

- Study of symmetries of scan patterns generated by laser scanners with a pair of rotational Risley prisms, *Infrared Remote Sensing and Instrumentation XXXII (SPIE Optics and Photonics)*, San Diego, CA, USA, Aug. 18-22, **2024**; (Invited Paper);
- Optimization of X-ray radiography (i.e., the gold standard of investigations in Dental Medicine) by using Optical Coherence Tomography (OCT), *COST CA21159 PhoBioS Workshop on-line*, July 5, **2024**; (Invited Presentation);
- Optical Coherence Tomography vs. X-ray imaging for biomedical applications, *10<sup>th</sup> Int. Conf. on Antennas and Electromagnetic Systems (AES 2024)*, Rome (Italy), June 25-28, **2024** (Invited Paper, [link](#));
- Analysis, design, and applications of polygon mirror-based laser scanners, *4<sup>th</sup> Int. Adv. Conf. on Condensed Matter & Low Temp. Phys. (CMLTP 2024)* [ISI], Kharkiv (Ukraine), June 3-7, **2024** (Plenary, on-line);
- Optical Coherence Tomography (OCT)-seeing beneath the (sample) surface, *COST CA21159 PhoBioS Workshop on Photonic structure in Arctic environment (Training school Spitsbergen – lightbiosurface.com)*, University Centre in Svalbard (UNIS), Denmark, April 23-25, **2024** (Invited Lecture, on-line);
- Theory, simulations and experiments of laser scanning with rotational Risley prisms, *3<sup>rd</sup> Int. Adv. Conf. on Condensed Matter & Low Temp. Phys. (CMLTP)* [ISI], Kharkiv (Ukraine), June 5-11, **2023** (Keynote);
- Symmetry aspects of patterns produced by optical scanners with Risley prisms, *9<sup>th</sup> Int. Conf. on Antennas and Electromagnetic Systems (AES)*, Torremolinos (Spain), June 5-8, **2023** (Invited Paper);
- Investigations and Modeling of the Sintering of Ceramic Dental Crowns, *9<sup>th</sup> Int. Conf. on Lasers in Medicine & 3<sup>rd</sup> Int. Congress Lasers in Dentistry*, Oradea (Romania), May 25-27, **2023** (Invited Presentation);
- 1D and 2D galvanometer scanning: Multi-parameter analysis and optimization, *Proc. SPIE 12233, 122330H, Infrared Remote Sensing and Instrumentation XXX (SPIE Optics and Photonics)* [ISI], San Diego, CA, USA, Aug. 21–26, **2022**, <https://doi.org/10.1117/12.2634221> (Invited Presentation);
- Laser scanners with rotational Risley prisms: A graphical method to determine and study exact scan patterns, *8<sup>th</sup> Int. Conf. on Antennas and Electromagnetic Systems (AES)*, Marrakesh (Morocco), May 24-27, **2022** (Invited Paper); [https://aes22.aesconference.org/files/aes22\\_proceedings.pdf](https://aes22.aesconference.org/files/aes22_proceedings.pdf);
- Optical Coherence Tomography versus Scanning Electron Microscopy in the Assessment of Metallic Fractures, *Mexican Optics and Photonics Meeting*, on-line, Nov. 18-20, **2021** (Invited Paper);
- A novel, graphical method to analyze optical scanners with Risley prisms, *Infrared Remote Sensing and Instrumentation XXIX (SPIE Optics + Photonics)* [ISI], San Diego, USA, Aug. 1–5, **2021** (Invited Paper); [doi](#)
- Optical choppers with disks, with an insight in biomedical applications, *2<sup>nd</sup> Int. Advanced Conf. on Condensed Matter & Low Temp. Physics (CMLTP - Speakers)* [ISI], Kharkiv (Ukraine), June 6-12, **2021** (Plenary Lecture);
- Advances in laser scanning technology for optical coherence tomography, *X Iberoamerican Optics Meeting/XIII Latinamerican Meeting on Optics, Lasers and Applications/Mexican Optics and Photonics Meeting (RIO-OPTILAS)*, [link](#), Cancun (México), Sept. 22-27, **2019** (Invited Paper);
- Optical Choppers: Classical, Eclipse, and with Rotational Shafts, *6<sup>th</sup> Advanced Electromagnetics Symposium (AES)*, <https://AES19/invited>, Lisbon (Portugal), July 24-26, **2019** (Invited Paper);
- Scanning systems: from industrial to high-end biomedical applications using OCT, *IX Int. Conf. for Professionals & Young Scientists ICPYS-LTP*, Kharkiv (Ukraine), June 4-8, **2018** (SPIE Invited Lecture);
- Theoretical and experimental approaches on galvanometer scanners for high-end biomedical imaging applications, *5<sup>th</sup> Adv. Electromagnetics Symp.*, Incheon (South Korea), July 27, **2017** (Invited Presentation);
- Laser scanning optimization for high-end applications in biomedical imaging, *SPIE-SRLS 7<sup>th</sup> Int. Conf. on Lasers in Medicine* [ISI], Timisoara (Romania), July 14, **2017** (Invited Paper);
- Scanning systems: from industrial to high-end biomedical applications (SPIE Invited Lecture – at *Optics & Photonics Applications (OPA) Conf.*), Univ. of Guanajuato, Salamanca (Mexico), Sept. 2, **2015**;



- Handheld scanning probes for OCT: Developments, applications and perspectives, *World Federation of Lasers in Dentistry–European Division 5th Congress & SRLS 6<sup>th</sup> Int. Conf. Lasers in Medicine* [ISI], Bucharest (Romania), May 8, **2015**, in *Proc. SPIE*, [doi](#) (Invited Presentation);
- Scanning in biomedical imaging: from classical devices to handheld heads and micro-systems, *SRLS-SPIE 5<sup>th</sup> Int. Conf. Lasers in Medicine* [ISI], Timisoara (Romania), Sept. 21, **2013**, [DOI](#) (Invited Paper);
- Laser scanning: from industrial to biomedical applications, *RIAO-OPTILAS (VIII Iberomamerican Opticas Meeting & XI Latinamerican Meeting on Optics, Lasers and Applications)*, Porto (Portugal), July 23, **2013** - *Proc. SPIE*, <http://dx.doi.org/10.1117/12.2025220> (Invited Paper);
- Mathematical functions of a 2-D scanner with oscillating elements, *9th Conf. on Dynamic Systems Theory and Applications*, Łódź (Poland), Dec. 18, **2007**; [10.1007/978-1-4020-8778-3\\_22](https://doi.org/10.1007/978-1-4020-8778-3_22) (Invited Paper);
  - **At International Universities**
- Optical Coherence Tomography Investigations in Dental Medicine, *Applied Optics Group, Univ. of Kent, Canterbury* (UK), Feb. 26, **2020** (Invited Seminar), <https://research.kent.ac.uk/applied-optics/aog-seminars/>;
- Devices and Systems for Biomedical and Industrial Applications of OCT, *Universidad de Guadalajara* (<http://www.cucei.udg.mx/>), Jalisco (México), Nov. 28, **2018** (Magistral Conference);
- Dental Medicine Applications of Optical Coherence Tomography (OCT); OCT versus SEM in the study of metallic fractures for forensic investigations, *Universidad de Guadalajara* (<http://www.cucei.udg.mx/>), Jalisco (México), Nov. 29-30, **2018** (Two SPIE Invited Lectures);
- 1D and 2D Galvanometer Scanning and Handheld Probes in OCT; Risley Prisms, Polygon Scanners, and Other Devices for OCT - and More..., *Universidad de Guadalajara* (<http://www.cucei.udg.mx/>), Jalisco (México), Nov. 28-29, **2018** (Two Tutorials and Workshops, 3h each);
- Scanning patterns in imaging, *Applied Optics Group (School of Physical Sciences), Univ. of Kent, Canterbury* (UK), Aug. 10, **2018** (Invited Seminar), <https://research.kent.ac.uk/applied-optics/aog-seminars/>;
- Laser scanners for high-end biomedical imaging, *City Univ. of New York, NY* (USA), Oct. 13, **2017** (Invited Seminar – Dept. of Mechanical Engineering);
- Handheld Probes and Galvoscaning in OCT. On-going Industrial and Biomedical Applications, *Applied Optics Group, Univ. of Kent, Canterbury* (UK), Feb. 20, **2015** (Invited Seminar);
- Scanning in Optical Coherence Tomography, *National Univ. of Ireland (NUI), Galway*, Nov. 25, **2014** [http://tomi.nuigalway.ie/SPIE\\_NUIG\\_UL/spie\\_events.html](http://tomi.nuigalway.ie/SPIE_NUIG_UL/spie_events.html) (SPIE Invited Lecture);
- 1D and 2D Scanning Systems in Biomedical Imaging, *School of Physical Sciences (Applied Optics Group), Univ. of Kent, Canterbury* (UK), Nov. 7, **2013** (Invited Presentation);
- Galvanometer-based Scanners in Optical Coherence Tomography (OCT), *City Univ. of New York* (USA), Febr. 14, **2013** (Invited Seminar-Dept. of Mechanical Engineering);
- Optical Engineering: Scanners, Choppers, Lenses, and Much More. A Mathematical Approach, *Ana G. Mendez Univ. System (AGMUS): Univ. Metropolitana, Univ. del Este, Univ. Turabo*, San Juan (Puerto Rico, USA), March 19-22, **2010** (3 Invited Lectures, Fulbright OLP);
- Optical Scanners in Medical Imaging. An Optomechanical Perspective, *City Univ. of New York* (USA), Apr. 15, **2010** (Invited Lecture - Dept. of Mechanical Engineering, Fulbright Occasional Lecturer Program - OLP);
- Laser scanners, *Inst. of Optics, Univ. of Rochester* (USA), Mar. 03, **2010** (Invited Lecture for PhD Students);
- Tutorials, *Hopkins Center for Opt. Metrology, Univ. of Rochester* (NY, USA): 1) Applications & types of scanners (Nov. 03, **2009**); 2) Scanners-fundamentals (Nov. 17, **2009**); 3) Constructive characteristics of scanners (Dec 01, **2009**); 4) Perspectives of opt. scanning in OCT (Jan 20, **2010**);
  - **At National Conferences and Universities**
- Laser Scanners with Industrial and Biomedical Applications, *Maritime University of Constanta* (Romania), July 30, **2024** (Invited Seminar);
- Optical Coherence Tomography in Dentistry, *Workshop Advanced Research Webinar of the Doctoral Schools of the “Victor Babes” University of Medicine and Pharmacy Timisoara*, May 5–6, **2022** (Invited Lecture);
- Non-Destructive Testing (NDT) in Industry: Study of Metallic Fractures with Optical Coherence Tomography (OCT) versus Scanning Electron Microscopy (SEM), *6th Int. Conf. Advances in Engineering & Management (ADEM)*, Drobeta-Turnu Severin (Romania), Dec. 10-11, **2020** (Keynote Lecture, [Program 2020.pdf](https://www.program2020.pdf));
- Multi-parameter Analysis and Optimization of 1D Galvanometer-based Laser Scanning with Applications in Optical Coherence Tomography, *IEEE 9<sup>th</sup> Int. Workshop on Soft Computing Applications (SOFA)*, Arad (Romania), Nov. 27-29, **2020** (Keynote Lecture, <https://www.sofa-org.eu/2020/prof-virgil-florin-duma/>);
- Biomedical Imaging using Optical Coherence Tomography (OCT). An Insight into Technology, Devices, and Applications, *The 6<sup>th</sup> Euro-China Conf. on Intelligent Data Analysis and Applications*, <https://www.ecc2019.ro/invited-speaker/>, Arad (Romania), Oct. 15-18, **2019** (Keynote Lecture);
- Optomechatronics and Biomedical Imaging. Projects at UAV Arad, *21<sup>th</sup> Int. Students Sc. Comm. Session of the Fac. of Eng. of the Aurel Vlaicu Univ. of Arad*, June 14-15, **2019** (Keynote Presentation);

- Applications of Optical Coherence Tomography in non-destructive testing, [Biommedd 2018](#), Cluj-Napoca (Romania), Sept. 27-29, **2018** (Invited Presentation);
- 2D scanning systems, patterns, and handheld probes for biomedical imaging, *2<sup>nd</sup> Int. Congress on Lasers in Dentistry* (<http://lasercongress-srls.com/>), Mamaia (Romania), Sept. 5-7, **2018** (Plenary Lecture);
- Biomedical imaging with Optical Coherence Tomography. Systems and applications, *2<sup>nd</sup> Int. Seminar on Biomaterials and Regenerative Medicine* ([BioRemed](#)), Timisoara (Romania), Oct. 5, **2017** (Invited Lecture);
- Laser scanners with oscillatory mirrors for high-end applications, [TIM Physics Conf.](#) [ISI], Timisoara (Romania), May 25-27, **2017** (Keynote Lecture);
- Optical Coherence Tomography in Metallic Materials Characterization, [RoMAT2016](#), Bucharest (Romania), Nov. 10, **2016** (Invited Presentation);
- Optical Coherence Tomography: Handheld scanning probes with galvanometer scanners, [TIM 15-16 Physics Conf.](#) [ISI], Timisoara (Romania), May 28, **2016** (Invited Presentation);
- Optimization of biomedical systems for OCT with applications in Dental Medicine, *21<sup>th</sup> Congress of Dental Medicine*, Timisoara (Romania), May 21, **2016** (Invited Presentation);
- Biomedical imaging using Optical Coherence Tomography. Devices, systems, and applications, [BioRemed Int. Conf.](#), Oradea (Romania), Sept. 19, **2015** (Invited Presentation);
- Biomedical Imaging and Optical Coherence Tomography: Scanning Systems and Applications, *Academic Days of the Victor Babes Univ. of Medicine and Pharmacy of Timisoara* (Romania), Dec. 12, **2014** (Invited Lecture);
- Renewable Energies—Two Projects and a Global Perspective, HURO/1101/175/2.1.1 ([www.huro-cbc.eu](http://www.huro-cbc.eu)), *Romania-Hungary Program of Trans-frontiers Cooperation*, Arad, Apr. 11, **2014** (Invited Presentation);
- Achievement of the South-West Axis in Industrial Robots of the EUROP-RO Technological Platform, *2<sup>nd</sup> EUROP-RO Symp.*, Bucharest (Romania), Apr. 26, **2007** (Keynote Lecture).

#### SCHOLARSHIPS & FELLOWSHIPS

- **Visiting Senior Research Fellowship**, at the [Univ. of Kent](#), Canterbury (UK); Host: [Prof. Adrian Gh. Podoleanu](#) (Head of the *Applied Optics Group - AOG*), July **2009**-Present;
- **Fulbright Senior Research Fellowship**, awarded by the US Dept. of State, at [The Institute of Optics](#) (#1 in Optics and #4 in Applied Physics in the US), [Univ. of Rochester, NY](#) (USA); Host: [Prof. Jannick P. Rolland](#) (Brian J. Thomson Chair in Optical Engineering), [ODAlab](#), Sept. **2009**-June **2010**;
- **BEST** (Board of European Students of Technology) **Scholarship**, Summer School, *Eindhoven Univ. of Technology*, The Netherlands: Energy in Its Various Aspects; concluded with the team project: Nuclear Plant – Design and Ecological Aspects, July **1991**;
- **Republican Merit Scholarship** for outstanding results, highest student award in Romania, from the Romanian state (**1990-1991**).

#### RESEARCH STAGES

**1 month** research stages:

[Univ. of Kent](#), Canterbury (UK): Aug. **2018**; Aug. **2016**; July-Aug. **2015**; Aug. **2013**; July-Aug. **2011**;  
[Univ. of Rochester, NY](#) (USA): Oct. **2016**; Oct. **2015**; June **2010**;

**1-2 weeks (Visiting Professor):**

*Universidad de Guadalajara* - <http://www.cucei.udg.mx/> (Mexico), Nov. 26-Dec. 1, **2018**;  
[Univ. of Kent](#), Canterbury (UK): Feb. 13-22, **2015**; Feb. 07-21, Aug. 2-20 **2014**; Oct. 27-Nov. 09, **2013**;  
[Univ. of Rochester, NY](#) (USA): Oct. 16-23, **2017**; July 17-30, **2014**; Feb. 15-28, **2013**;  
*Univ. of Guanajuato*, Salamanca (Mexico), Aug. 31-Sept. 05, **2015**;  
*National Univ. of Ireland (NUI) at Galway* (Ireland), Nov. 24-27, **2014**;  
*City Univ. of New York—Nanofabrication Facility* (USA): Oct. 11-15, **2017**; Feb. 8-15, **2013**; Apr. 14-20, **2010**;  
*Ana G. Mendez Univ. System*, San Juan (Puerto Rico, USA): Mar. 18-22, **2010**;  
*RWTH Aachen* (Germany): June 25-30, **2007**;  
*Jacobs Univ. of Bremen* (Germany): Oct. 25-30, **2004**;

#### ERASMUS+ Teaching Stages

[Univ. of Kent](#), Canterbury (UK): Feb. 24-29, **2020**;

#### AWARDS

- **ANCS Award** PN-III-P1-1.1-PRECISI-2021-64704 for *Materials* **13**(9), 3908 (**2020**); [doi](#); (400€);
- **ANCS Award** PN-III-P1-1.1-PRECISI-2021-59149 for *Materials* **13**(21), 4825 (**2020**); [doi](#); (400€);
- **ANCS Award** PN-III-P1-1.1-PRECISI-2021-57882 for *Sensors* **21**(13), 4554 (**2021**); [doi](#); (1200€);
- **ANCS Award** PN-III-P1-1.1-PRECISI-2020-50044 for *QIMS* **9**(5), 782-798 (**2019**); [doi](#); [link](#) (400€);

- ANCS Award PN-III-P1-1.1-PRECISI-2020-49768 for *IJMS* 21(3), 778 (2020); doi; link (400€);
- **1<sup>st</sup> Best Oral Presenter Award**-for Luca R.E., Todea C.D., Duma V.-F., *et al.*, Enhancements of Bone Regeneration Techniques using Laser Photobiomodulation: An Ex-vivo Study on Wistar Rats based on OCT and Histology, 24<sup>th</sup> UAE Int. Dental Conf. & Arab Dental Exhibition, Dubai 2020; <https://aeedc.com/>;
- ANCS Award PN-III-P1-1.1-PRECISI-201939511 for *APM* 67(3), 456-476 (2019); doi; link (1,250€);
- ANCS Award PN-III-P1-1.1-PRECISI-2019-334883 for *Materials* 12(6), 947 (2019); link (200€);
- ANCS Award PN-III-P1-1.1-PRECISI-2018-24971 for *Proc. Rom. Acad. A* 19, 53-60 (2018); link (500€);
- ANCS Award PN-III-P1-1.1-PRECISI-2018-24968 for *Metals* 8(2), 117 (2018); doi (500€);
- **Top 1% reviewers** in the Field of Physics, 2018 (link) – <https://publons.com/awards/>;
- ANCS Award [PN-III-P1-1.1-PRECISI-2018-22154](https://publons.com/awards/) for *IJSSD* 17(5), 1740006 (2017); doi (500€);
- **IOP (Inst. of Physics, UK) Award:** Outstanding reviewer for *Measurement Science and Technology*, 2017;
- ANCS Award [PN-III-P1-1.1-PRECISI-2017-15869](https://publons.com/awards/) for *Proc. Rom. Acad. Series A* 18, 25 (2017) link (500€);
- ANCS Award [PN-III-P1-1.1-PRECISI-2017-19701](https://publons.com/awards/) for *Opt. Express* 25(19), 23388 (2017); doi (500€);
- **Top 1% reviewers** in the Field of Physics and Astronomy, 2016 – <https://publons.com/awards/>;
- **2nd Prize for Poster Presentation:** Mitroi F. E., Sinescu C., Negrutiu M. L., Stoica E. T., Duma V.-F., Bradu A., Podoleanu A., Confocal laser scanning microscopy versus digital microscopy in the analysis of the marginal adaptation of Tizian overlays, 7<sup>th</sup> Int. Conf. Lasers in Medicine (ICLM), Timisoara, July 15, 2017;
- **Excellent Paper Award - Oral Presentation:** Beiu R.\*, Mnerie C.A., Duma V.-F., Analysis of Curved Shape Micro-mirrors For On-Chip Communication, *SPIE ATOM-N*, Constanta (Romania), doi, 2016;
- ANCS Award [PN-III-P1-1.1-PRECISI-2016-12189](https://publons.com/awards/) for *Opt. Express* 24(12), 13365-13374 (2016) (1,300€);
- ANCS Award PN-III-P1-1.1-PRECISI-2016-11474 for *R. R. Physics* 67(4), 1346-1358 (2015), link (500€);
- ANCS Award PN-II-RU-PRECISI-2015-9-8637 for *Applied Optics* 54(17), 5495-5507 (2015), link (500€);
- ANCS (Romanian Authority for Scientific Research) **Habilitation Award** 3863/2014 (1,200€);
- **1<sup>st</sup> Award - Implant Poster Competition**, for M.L. Negrutiu, C. Sinescu, V.-F. Duma, A. Manescu, MicroCT Investigation of Bone Graft Biomaterials, *New York Great Dental Meeting*, USA, 2014;
- ANCS Award 6510/2014, for *Applied Optics* 53(26), 5912-5916 (2014) link (500€);
- **SPIE Senior Membership** (Int. Society for Optics and Photonics, Bellingham, WA, USA) since 2011 (link);
- **Merit Gradation**, granted for 3, respectively for 5 years, on a competitive basis, highest professional recognition and salary bonus (+25%) in a Romanian University, 2008-2010, 2012-2016, and 2017-2021;
- ANCS Award 1257/2011 for *Applied Optics* 50(29), 5735-5749, 2011, link (500€);
- ANCS Award 1390/2010, for *Applied Optics* 48(32), 6355-6364, 2009, link (500€);
- ANCS Award 1391/2010, for *Applied Optics* 48(14), 2678-2685, 2009, link (500€);
- ANCS Award 87/2008, for *J. of Optics A: Pure and Applied Optics* 10(6), 064008, 2008, link (1 k€);
- **Merit Salary**, granted annually, on a competitive basis (15% salary bonus), by the Univ., 2004-2006;
- **University, 'Traian Lalescu' National Students' Olympiads:**
  - **1989** (3<sup>rd</sup> year) **National: special award in Mechanics of Fluids; local:** 1<sup>st</sup> award in Mechanics of Fluids, 1<sup>st</sup> award in Electrotechnics;
  - **1988** (2<sup>nd</sup> year) **National: 1<sup>st</sup> award in Physics (Electromagnetism, Optics & Quantum Mech.), special award in Mathematics; local:** 1<sup>st</sup> award for Mathematics, 1<sup>st</sup> award in Physics;
  - **1987** (1<sup>st</sup> year) **National: 3<sup>rd</sup> award in Physics (Mechanics & Thermodynamics); local (Timisoara County Universities Center):** 1<sup>st</sup> award in Physics, special award in English; special award for scientific communications in Mathematics;
  - **High School:** 2<sup>nd</sup> award in Physics, Arad County, 1982.

#### RESEARCH GRANTS & CONTRACTS (UEFISCDI ID (UEF-iD): U-1700-029M-1912)<sup>1</sup>

1. **Principal Investigator (PI), IDEAS Project** PN-III-P4-ID-PCE-2020-2600 (Contract 55PCE/2021), [Romanian National Authority for Scientific Research \(ANCS-UEFISCDI\)](https://publons.com/awards/): *Laser scanning systems with Risley prisms, with applications in biomedical and industrial imaging using Optical Coherence Tomography (OCT) (RISLEY4OCT)*, (250 k€); Jan. 2021-Dec. 2023; 13 researchers. 7 Guest Edited Special Issues of ISI Web of Science (WoS) journals; Chaired 2 ISI Conferences (2021; 2023), 2 Workshops (2021; 2023). *Publications:* 16 Invited Presentations; 18 ISI Proc.; 33 other conf. presentations; 1 patent; 4 books; 3 PhD Theses; 1 Dissertation; 14 WoS journal papers, **ΣIF=50.52**; <http://3om-group-optomechatronics.ro/pce2600/>
2. **PI, Project for Experimental Demonstration (PED)** PN-III-P2-2.1-PED-2020-4423 (Contract 418PED/2020), [ANCS-UEFISCDI](https://publons.com/awards/): *Optical Coherence Tomography for Non-Destructive Testing in Industry (OCT4NDT)*, in partnership with [SC Inteliform SRL](https://publons.com/awards/) (145 k€); Oct. 2020-Oct 2022; 15 researchers. 4 Guest

<sup>1</sup> Each journal paper, when not specified otherwise, is funded by only one of the grants in the list.



- Edited Special Issues of ISI WoS journals; *Publications*: 4 Invited Presentations, 12 conf. presentations; 1 patent; 2 books; **8 ISI WoS journal papers,  $\Sigma$ IF 25.811**; <http://3om-group-optomechatronics.ro/ped4423/>
3. **Responsible for the Physics Work Package (1/4), Grant POC-A1-A1.1.3-E-2015**, funded by the European Union (through European Regional Development Funds Structural Operational Program “Competitiveness” Priority axis 1, Operation 1.1.4. Contract Number 30/2016): *New nano-ARCHITECTURES OF BIOLOGICAL INSPIRATION OF CELULAR TYPE (NanoArt Bio Cell)*, PI: Prof. V. Beiu (2 M€), Aug. **2016** - Aug. **2020**; **3 journal papers in ISI WoS-from WP1,  $\Sigma$ IF 8.005** (also funded by other grants);
  4. **PI, Project for Experimental Demonstration (PED) Grant PN-III-P2-2.1-PED-2016-1937** (Contract 44PED/2017), [ANCS-UEFISCDI](http://3om-group-optomechatronics.ro/pedp1937/): *Micro-Electro-Mechanical Systems (MEMS)-based handheld scanning probes for distortion-free biomedical imaging with Optical Coherence Tomography (OCT) (MEMS-HH-OCT)*, in partnership with [SC Inteliform SRL Timisoara](http://www.inteliform.ro) (133 k€); Jan. **2017**-July **2018**; 14 researchers. *Publications*: 6 Invited Presentations, 9 ISI Proc., 15 other conf. presentations; **9 ISI WoS journal papers,  $\Sigma$ IF 21.041**; <http://3om-group-optomechatronics.ro/pedp1937/>
  5. **PI, Bridge Grant PN-III-P2-2.1-BG-2016-0297** (Contract 48BG/2016), [ANCS-UEFISCDI](http://3om-group-optomechatronics.ro/bg297/): *Optomechatronic choppers with rotational discs and shafts for metrological, biomedical, and laser manufacturing applications (OP-CHOP)* (102 k€), Oct. **2016**-Oct. **2018**; 8 researchers. *Publications*: 5 Invited Presentations, 12 ISI Proc., 13 other conf. presentations; **4 ISI WoS journal papers,  $\Sigma$ IF 9.225**; <http://3om-group-optomechatronics.ro/bg297/>
  6. **Responsible for Partner, Transfer to Industry (PTE) Grant PN-III-P2-2.1-PTE-2016-0181** (Contract 24PTE/2016), [ANCS-UEFISCDI](http://3om-group-optomechatronics.ro/ptep181/): *Handheld scanning probes with 1D and 2D galvoscaners for biomedical and industrial investigations using Optical Coherence Tomography (OCT) (1D2D-GS-OCT)*, PI: M. Vlasici – [SC Inteliform SRL Timisoara](http://www.inteliform.ro) (435 k€), Oct. **2016**-Oct. **2018**; 2 institutions, 12 researchers. *Publications*: 1 book, 18 Invited Presentations, 6 ISI Proc., 19 other conf. presentations; **11 ISI WoS journal papers,  $\Sigma$ IF 26.942**; <http://3om-group-optomechatronics.ro/ptep181/>
  7. **PI, PARTNERSHIP Grant PN-II-PT-PCCA-2011-3.2-1682** (Contract 22/2012) [ANCS-UEFISCDI](http://3om-group-optomechatronics.ro/pp1682/): *Optical Coherence Tomography (OCT) systems with handheld and endoscope probes for real-time investigations in material studies and for in vivo medical imaging* (5 institutions, 36 researchers), July **2012**-Dec. **2016** (950k€). *Publications*: 2 books, 1 patent, 1 Habilitation, 1 PhD thesis, 13 Invited Presentations, 47 ISI Proc., 28 other conf. presentations; **17 ISI WoS journal papers,  $\Sigma$ IF=31.633**. <http://3om-group-optomechatronics.ro/pp1682/>
  8. **PI, Fulbright Senior Research Grant 474/July 1, 2009**, in Optical Engineering (from the US Department of State): *Scanning in Swept Source Optical Coherence Tomography (OCT)*, at [The Institute of Optics](http://www.theinstituteofoptics.com) (#1 in Optics and #4 in Applied Physics in the USA), [Univ. of Rochester, NY](http://www.urochester.edu) (USA); Host: [Prof. J. P. Rolland, ODAlab](http://www.oda.ro), Sept. **2009**-June **2010** (\$26,450). *Publications*: 2 ISI Proc., 3 other conf. presentations; **1 ISI WoS journal paper, IF=1.748** (also funded by IDEAS Grant 1896);
  9. **Researcher, NYSTAR** (New York Science and Technology Association for Research) Award 054048-002, PI [Prof. J. P. Rolland, The Institute of Optics, Univ. of Rochester, NY](http://www.urochester.edu) (USA), **2010** (\$1.2 M; support of \$6k);
  10. **PI, IDEAS Grant 1896/2008, ANCS-UEFISCDI**: *Analysis and design of some polygonal and galvanometer-based, 1D and 2D scanners*, **2009-2011** (101 k€); 7 researchers. *Publications*: 5 book chapters, 1 patent, 10 ISI Proc., 11 other journal and conf. papers; **6 ISI WoS journal papers,  $\Sigma$ IF=9.931**; [ideas-project-1896/](http://www.ideas-project.ro)
  11. **Researcher, PN II PARTNERSHIPS Grant 41-084/2007**, Romanian Education and Research Ministry - ANCS: *Use of genetic markers for establishing optimal therapies for laryngeal and oropharyngeal human cancer*, Univ. of Bucharest, PI Dr. L. Ghetea, **2007-2010** (600 k€);
  12. **Researcher, Balkan Environmental Association (BENA)-COSMOTE Grant 1428/2007**, *Remote, computer assisted command and optimize of the use of a solar installation for greenhouses and small consumers*, PI Dr. D. Silaghi, **2007** (750 €);
  13. **Researcher, CEEEX Grant**, ANCS code 126/2006, Romanian Education and Research Ministry-ANCS: *EUROP\_RO Technology Platform (European Robotics Platform, Romanian branch)*, PI Prof. Adrian Nicolescu, Polytechnic Univ. of Bucharest, **2006-2008** (60 k€);
  14. **PI, 3 Research Contracts** (Romanian companies), through Aurel Vlaicu Univ., **2004-2005** (2 k€);
  15. **PI, Young Researchers (AT) Grant**, ANCS code 385: *Development of Some New Scanning Equipments*, **2003-2004** (3.5 k€); **2 books (monographs)** [B5, B6];
  16. **Researcher, Leonardo da Vinci Program** of the European Union, **Timkars Project**, for conceiving the courses in Precision Mechanics & Optics (simultaneously published in Germany and in Romania); **co-author of the book: Measuring and Control Apparatuses. Metrology** [B4], **1999-2001** (225 k€);
  17. **Researcher, Program Ro-4096** with Word Bank, **Doctoral Grant**, ANCS code 57: *Methods and means for improvement performances of the equipments for precision mechanics and quality control*, PI Prof. Dan Perju, Polytechnic Univ. Timisoara, **1998-2002 RO4096** (\$30k); **PhD Thesis defended Sept. 2001**.

## STRATEGIC & COOPERATION GRANTS

18. **PI, OSA Global Meeting Grant**, to organize the 1<sup>st</sup> Int. Conf. [Advances in 3OM: Opto-Mechanics, Opto-Mechatronics, and Optical Metrology](#), Timisoara (Romania), **2020** (\$3k);
19. **Co-PI, Erasmus+**, Univ. of Kent, School of Physical Sciences (UK)-Aurel Vlaicu Univ. of Arad, **2018-2021**;
20. **Member**, *COST Action CA 21159 "Understanding interaction light - biological surfaces: possibility for new electronic materials and devices"* (*PhoBios*), <https://www.cost.eu/actions/CA21159/>, **2022-2026**;
21. **Member**, *COST Action CA17126 "Towards understanding and modelling intense electronic excitation"* (*TUMIEE*), [http://www.cost.eu/COST\\_Actions/ca/CA17126](http://www.cost.eu/COST_Actions/ca/CA17126), **2018-2023**;
22. **Member**, *COST Action CM1405, "Molecules in Motion"*, <https://www.molim2018.ethz.ch/2018/>, **2015-2019**;
23. **Consultant** (Expert-Coordinator of the Mechatronics and Mechanical Engineering Domain of the Univ.), **POSDRU/5/1.5/S/2** (EU funding)-UEFISCDI Project: *Doctorate in Schools of Excellence – Evaluation of the Quality in Universities and the Increase of Visibility by Scientific Publishing*, **2009-2011**;
24. **Consultant** (Expert in Education), **POSDRU 2/1.2/S/3** (EU Funding)-UEFISCDI Project code 2684: *Quality and Leadership for Romanian High Education System (QLHE)* ([www.edu2025.ro](http://www.edu2025.ro)), **2009-2011**;
25. **Consultant** (Expert in Mechatronics & Robotics), **POSDRU 2/1.2/S/2** UEFISCDI: *Development of an operational system of professional qualifications in Romania (DOCIS)*, **2009-2011**;
26. **Consultant** (Expert in Robotics), **CARE** (Coordinated Action for Robotics in Europe), **FP 6** Program of the European Commission, EU (participation at CARE Consensus Meetings: Stuttgart, May 2008; Pisa, Oct. **2008**, for elaboration of SRA 2008-2020 – Strategic Research Agenda for Robotics in Europe);
27. **Co-PI, Erasmus**, RWTH Aachen (IGM) - Aurel Vlaicu Univ. of Arad, **2007-2013**;

## TRAVEL GRANTS

28. **PI**, Support from MDPI to participate at the *10<sup>th</sup> Int. Conf. on Antennas and Electromagnetic Systems (AES 2024)*, Rome (Italy), (400€), June 25-28, **2024**;
29. **PI**, Support from COST Action CA21159 (*PhoBioS*) to participate at *SPIE Photonics Europe*, Strasbourg (France), (1k€), Apr. 7-11, **2024**;
30. **PI, Grant** PN-III-P1-1.1-MCD-2021-0058, [ANCS-UEFISCDI](#) to support to support a visit from the [Univ. of Kent](#), Canterbury (UK) to UAV Arad (1.2k€), Nov. **2021**;
31. **PI**, Support from EU ERASMUS+, to lecture at the Univ. of Kent (UK), 1 week, Feb. **2020** (>1.1k€);
32. **PI**, Support from the Hungarian Acad. of Sciences, to participate at the <https://worldscienceforum.org/>, as representative of Romania in the Fulbright delegation, Budapest (Hungary), Nov. **2019** (>300€);
33. **PI, SPIE Lecturer Program Grant** from [SPIE](#) (The Int. Society for Optics & Photonics, USA) and the *Univ.* for lecturing at the *Universidad de Guadalajara* (Mexico), Nov. 26-30, **2018** (~\$2k);
34. **PI, Grant** PN-III-P1-1.1-MCD-2018-0230, [ANCS-UEFISCDI](#) to support to support a visit from the [Univ. of Kent](#), Canterbury (UK) to UAV Arad (~1k€), [link](#), Nov. **2018**;
35. **PI, SPIE Lecturer Program Grant** from [SPIE](#) for lecturing at the *9th Int. Physics Conf. ICPYS-LTP*, Kharkov (Ukraine), June 4-8, **2018** (~1k€);
36. **PI, SPIE Grant** to support with a booth the participation at the *SPIE Photonics Europe "Innovation Village"*, Strasbourg (France), Apr. 22-23, **2018**;
37. **PI**, Support from the Royal Society of Jordan, to participate at the [World Science Forum](#), as representative of Romania in the Fulbright delegation, Jordan, Nov. 7-11, **2017** (>1k€);
38. **PI, Grant** PN-III-P1-1.1-MCD-2016-0077, [ANCS-UEFISCDI](#) to support a visit from the [Univ. of Kent](#), Canterbury (UK) to UAV Arad (~1.3k€), [link](#), Nov. **2016**;
39. **PI**, Full support from ANCS to participate at the Int. Conference *Diaspora in Scientific Research and Higher Education in Romania*, Timisoara **2016**;
40. **PI**, Support from the Hungarian Acad. of Sciences, to participate at the [Word Science Forum](#), as representative of Romania in the Fulbright delegation, Budapest (Hungary), Nov. **2015** (>300€);
41. **PI, SPIE Lecturer Program Grant** from [SPIE](#) and support from the *Univ. of Guanajuato* for lecturing at this university (Mexico), Sept. **2015** (~\$1.8k);
42. **PI, SPIE Lecturer Program Grant** from [SPIE](#) for lecturing at the *National Univ. of Ireland (NUI)* at Galway, Nov. **2014** (600€);
43. **PI**, Support from the Brazilian Acad. of Sc. and from the Fulbright Assoc., to participate at the [Word Science Forum](#), as representative of Romania in the Fulbright delegation, Rio de Janeiro (Brazil), Nov. **2013** (~4k€);
44. **PI**, Support from Fulbright Acad. of Sc. & Tech. and from Hungarian Acad., to participate at the [Word Science Forum](#), as representative of Romania in the Fulbright delegation, Budapest (Hungary), Nov. **2011** (~1.5k€);
45. **PI, Research Foundation** of City Univ. of New York, for Invited Seminar, April **2010** (\$350);
46. **PI, Fulbright Conference** Support-from the US Dept. of State, for participating at the *Fulbright Conference: Linking Campus to Community*, at Georgetown Univ., Washington DC (USA), April **2010** (~\$1k);



47. **PI, Fulbright Occasional Lecturer Program Grant** – from the US Dept. of State, for lecturing in San Juan (Puerto Rico, USA), March **2010** (\$750); in New York City (USA), April **2010** (\$250);
48. **PI**, Ratiu Family Charitable Foundation (UK) Grant, for participating at the *SPIE 1<sup>st</sup> Canterbury Workshop on Adaptive Optics and OCT* [ISI], Sept. **2008**, Kent (UK) (335£);
49. **PI, MC ANCS Grant 237/2007**, for participating at *DSTA Conference*, Lodz (Poland), [link](#) (800€);
50. **PI, MC ANCS Grant 140/2007**, for *DAAAM Symposium* [ISI], Zadar (Croatia), [link](#) (800€);
51. **PI, IEEE & FEDROM** (FEDeration of ROManians in Spain) Support for participation at *IEEE/LEOS ODIMAP V* (2 papers), Oct. **2006**, Madrid (Spain), (~900€).

## AFFILIATIONS

- **SPIE – Senior Member** since 2011 ([The Int. Society for Optics and Photonics](#)), member since 2005;
- **Fulbright Association** (<http://fulbright.org/>) – **Life Member** since 2011;
- **OPTICA/OSA** ([Optical Society of America](#)), member since 2007 – **Life Member** since 2014;
- **European Technology Platform Photonics21** (<http://www.photonics21.org/>) - since 2006;
- **EPIC** ([European Photonics Industry Consortium](#)) - since 2014;
- **EUROP-RO**, branch of the **European Robotics Platform EUROP**, vice-president of EUROP-RO (responsible for the South-West Axis), 2006-2010;
- **IEEE** (Institute of Electrical and Electronics Engineers), 2006-2007;
- **IFTtoMM** (International Federation for the Theory of Mechanisms and Machines), 1998-2002;
- **SRR** (Romanian Robotics Society), since 2010; President of the Arad County branch, 2010-2015;
- **SRLS** ([Romanian Society for Lasers in Dentistry](#)) - since 2016;
- **INSTICC** (Institute for Systems and Technologies of Information, Control and Communication) – since 2021;

## COMMITTEES, PEER-REVIEWER, EVALUATOR - [publons.com/a/1280971/](https://publons.com/a/1280971/)

### REVIEWER OF PEER-REVIEWED JOURNALS (of different Publishing Houses):

- **OPTICA (former OSA - Optical Society of America)**: [Optics Express](#) (IF>3.5), [Biomedical Optics Express](#) (IF>3.5), [Optics Letters](#) (IF>3.5), [J. Opt. Soc. Am. A](#) (IF>1.5), [Applied Optics](#) (IF>1.5), [Photonics Research](#) (IF>5.5), [OSA Continuum](#), Optica (IF>7), since 2007;
- **SpringerNature**: [Acta Mechanica Sinica](#) (IF≈0.7), since 2010; [Differential Eqs. and Dynamic Systems](#), since 2012; [J. of Zhejiang University SCIENCE A](#) (IF≈0.5), since 2012; [Meccanica](#) (IF>2), since 2020; [Scientific Reports](#) (IF≈4), since 2020;
- **Elsevier**: [Optics Communications](#) (IF≈1.5), since 2015; [Mechatronics](#) (IF≈1.8), since 2015; [Control Eng. Practice](#) (IF>3), since 2015; [Applied Mathematical Modelling](#) (IF>2), since 2016; [Diabetes Research and Clinical Practice](#) (IF>3.5), since 2018; [Optik](#) (IF≈2); [Optical Fiber Technology](#) (IF≈2), since 2019; [Precision Engineering](#) (IF>2.5); [Saudi Dental Journal](#), since 2020;
- **Wiley**: [Lasers in Surgery & Medicine](#) (IF>2.5), since 2015;
- **IEEE**: [IEEE Access](#) (IF>3), since 2017; [IEEE Transactions on Industrial Electronics](#) (IF>7), since 2015; [IEEE/ASME Transactions on Mechatronics](#) (IF≈3.5), since 2015;
- **ASME**: [J. of Medical Devices](#) (IF>0.5), since 2015;
- **IOP (UK)**: [J. of Optics](#) (IF>2), since 2015; [Measurement Science and Technology](#) (IF>1.4), since 2015; [J. of Physics D: Applied Physics](#) (IF>3), since 2018; [Biomed. Phys. & Eng. Express](#) (IF>1), since 2020;
- **SPIE**: [Optical Engineering](#) (IF>1), since 2019;
- **AIP**: [Theoretical & Applied Mechanics Letters](#), since 2012;
- **SAGE**: [J. of Engineering in Medicine](#) (IF>1), since 2014;
- **Taylor & Francis**: [J. of Adhesion Sc. and Tech.](#) (IF>1), since 2015; [Phase Transitions](#) (IF≈1), since 2015;
- **MDPI**: [Applied Sciences](#) (IF>1.7), since 2016; [Sensors](#) (IF>3), [Materials](#) (IF>2.5), since 2017; [Remote Sensing](#) (IF>4), [Mathematics](#) (ISI), [Photonics](#) (IF>2.5), since 2018; [Int. J. of Molecular Sciences](#) (IF>4), since 2019; [J. of Clinical Medicine](#) (IF>5.5), since 2020; [Pharmaceuticals](#) (IF>5.8), since 2021; [Biomedicines](#) (IF>4.5), since 2023; [Bioengineering](#) (IF>5), since 2023;
- **AME**: [Quantitative Imaging in Medicine and Surgery](#) (IF>3), since 2019;
- **Romanian Academy**: [Romanian Reports in Physics](#) (IF>1.5), since 2018;
- [Latin American Journal of Solids and Structures](#) (IF>1), since 2012;
- **Hindawi**: [Advances in Optical Technologies](#), since 2011; [J. of Ophthalmology](#) (IF>1.7), since 2018;
- [J. of Visualized Experiments](#) (JOVE), (IF>1.5), since 2016;
- [Optica Applicata](#) (IF>0.5), since 2016;
- **L&P**, [Discontinuity, Nonlinearity, and Complexity](#), since 2016;

### REVIEWER OF GRANTS

- Since **2019**: **Reviewer** of Grants–National R&D Agency of Moldova (<https://ancd.gov.md/>);

- Since **2016: Reviewer** of Grants-Czech Science Foundation; 1 Proposal evaluated;
- Since **2013: Reviewer** of Grants - Foundation for Polish Science; 6 Proposals evaluated;
- Since **2010: Reviewer** of Fulbright Grants of the US Department of State; 10 Proposals evaluated;
- Since **2008: Reviewer** of Grants with European Union Funding (POS): 16 (2009), 6 (2010), 9 (2011), 8 (2012), 5 (2013), 5 (2015), 3 (2016);
- Since **2007: Reviewer** of Grants of the Romanian R&D Plan: 30 (2007), 13 (2008), 4 (2010), 8 (2011), 4 (2014), 15 (2015), 2 (2016), 1 (2017), 17 (2020), 5 (2022), 15 (2024); **UEFISCDI ID: U-1700-029M-1912**

#### COMMITTEES, CHAIRMAN

- Int. Adv. Committee, 1<sup>st</sup> IEEE Int. Conf. on Innovative Technologies in Advanced Computing (ITIAC), **2023**.
- **Chair** of Session 1 “Calibration and Simulation of Remote, in Time and Distance, Processes”, *Conference 12686 “Infrared Remote Sensing and Instrumentation XXXI”, SPIE Optics + Photonics [ISI], San Diego, CA, USA 2023*; <https://spie.org/conferences-and-exhibitions/optics-and-photonics>
- **Chair** of Session “Optoelectronics, Photonic Materials and Devices”, 9<sup>th</sup> Int. Conf. on Antennas and Electromagnetic Systems (*AES*), Torremolinos (Spain), **2023**;
- **General Chair, Member of Scientific & Organizing Committees**, SPIE-affiliated [ISI] Int. Conf. [Advances in 3OM: Opto-Mechatronics, Opto-Mechanics and Optical Metrology](#), Timisoara (Romania), **2021, 2023**;
- **Conference Board Member**, Int. Conf. on Materials: Advanced and Emerging Materials - Shenzhen Institute of Adv. Tech. Chinese Academy of Science (<https://2021icm-cn.sciforum.net/#ac>), Nov. 21-24, **2021**;
- **Chair**, 3OM Workshop in Optomechatronics and Biomedical Imaging, Arad (Romania) **2019, 2021, 2023**;
- **Chair** of Session, SRLS 8<sup>th</sup> Int. Conf. Lasers in Medicine, Constanta (Romania) **2018**;
- **Chair, Editor-SPIE Proc.** [ISI], **Member-Scientific & Organizing Committee**, reviewer, and **Chairman** of Session - SRLS 7<sup>th</sup> Int. Conf. Lasers in Medicine (*ICLM*), Timisoara (Romania) **2017**;
- **Member of the Scientific Committee** and reviewer, 2<sup>nd</sup> Int. Seminar on Biomaterials and Regenerative Medicine (*BioReMed*), Timisoara (Romania) **2017**;
- **Chair, Editor-SPIE Proc.** [ISI], **Member-Scientific Committee**, Organizing Committee, reviewer, and **Chairman** of Session - SRLS 6<sup>th</sup> Congress of the World Federation of Lasers in Dentistry-EU Division (WFLD-ED) & 6<sup>th</sup> Int. Conf. Lasers in Medicine (*ICLM*) ([wflid](#)), Bucharest (Romania) **2015**;
- **Chair, Editor-SPIE Proc.** [ISI], **Member-Scientific & Organizing Committee**, **Chairman** of Session-SRLS 5<sup>th</sup> Int. Conf. Lasers in Medicine (*ICLM*), Timisoara (Romania) **2013**;
- **Chair** of Session “Applications in high-tech products,” 11<sup>th</sup> IFToMM Int. Symposium on the Theory of Machines and Mechanisms – SYROM (<http://arotmm.ro/syrom2013/>), Brasov (Romania) **2013** [ISI];
- **Chair** of Session XXIX (BIO): RIAO-OPTILAS (VIII Iberoamerican Conf. Opt. & XI Latinamerican Meeting on Opt., Lasers and Applications) – SPIE [ISI], <http://riao.samura.pt/>, Porto (Portugal) **2013**;
- **Member of the Scientific Committee, Chairman** of Session, and reviewer, Int. Conf. on Dynamic Systems Theory and Applications (*DSTA*), Lodz (Poland), **2007; 2011; 2013; 2015; 2017; 2019; 2021**;
- **Chair** of Session: Optics in Precision Mechanics and Mechatronics, 8<sup>th</sup> Int. Conf. on Mechatronics and Fine Mechanics (COMEFIM), Cluj-Napoca (Romania), June 8-10, **2006**;
- **Member, Organizing Committees & reviewer** of the Proc. of ISREIE (Aurel Vlaicu Univ.), Arad (Romania), **2000, 2002, 2004, 2006, 2008, 2010, 2019**; **Editor** of the Engineering Proceedings, **2008, 2010**;

#### TEACHING ACTIVITY (current topics are bolded)

- **Lectures:** at the *Polytechnic Univ. of Timisoara*-Measuring and Control Apparatuses (1997-2001); at the *Aurel Vlaicu Univ. of Arad*-**Mechanisms** (1999-Present); Mechanical Systems (1999-2006); Mechanisms & Machine Parts (2001-2003); Elements of Mechanical Engineering (2001-2003); Equipments for Precision Mechanics (2002-2004); Tolerances & dimensional control (2004-2006); **Quality Engineering** (2008-Present); Peripheral Equipments of Computers (2010-2019); Instrumentation [Optoelectronics] (2010-2013); Management in Industrial Engineering (2010-Present); **Biomedical Engineering** (2013-Present); **3D Scanning** (2019-Present); **Optimizations** (2019-Present); Master Courses-Quality Systems (2015-2016); **Lasers Engineering & Applications** (2018-Present); **Management of Research Projects** (2019-Present); at *School of Physics, West Univ. of Timisoara*-Master Course, Technical and biomedical applications of lasers (in English) (2013-2015); at *School of Dental Medicine, Victor Babes Univ. of Medicine and Pharmacy of Timisoara*-Master Course EMDOLA, **Optics** (in English), (2016-Present);
- **Seminars:** Technical Optics (1991-1993); **Mechanisms** (1999-Present); **Quality Engineering** (2008-Present);
- **Laboratories:** Measuring and Control Apparatuses (1991-2001); Technical Optics (1991-1993); Spectral Apparatuses (1991-1994); Calculus and Construction of Optical Apparatuses (1991-1997); **Mechanisms** (1999-Present); Mechanical Systems (1999-2006); Mechanisms and Machine Parts (2001-2003); Equipments for Precision Mechanics (2002-2004); Tolerances and dimensional control (2004-2006); Peripheral Equipments of Computers (2010-2019); Instrumentation [Opto-electronics] (2010-2013); Technical and biomedical

applications of lasers (in English) (2013-Present); Quality Systems (2015-2016); **Lasers Engineering and Applications** (2018-Present); **3D Scanning** (2019-Present); **Optimizations** (2019-Present).

### PhD THESES supervised, on-going

- **Atilla Csillag, Eng.:** *Modeling, design and control of laser scanning systems for obtaining different scan patterns, for industrial and biomedical applications* at the Polytechnic Univ. of Timisoara, **2024–2028**. Supervisor: Prof. V.-F. Duma.
- **Atilla Tiberiu Teodorovits, Eng.:** *Contributions to the development of laser scanning systems with applications in Optical Coherence Tomography (OCT) for industrial metrology and biomedical studies* (in Romanian) at the Polytechnic Univ. of Timisoara, **2024–2028**. Supervisor: Prof. V.-F. Duma.
- **Sorina Coroban, Eng.:** *Non-destructive techniques for defect analysis in automotive industry* (in Romanian) at the Polytechnic Univ. of Timisoara, **2023–2027**. Supervisor: Prof. V.-F. Duma.
- **Nicolae Dogaru, Eng.:** *Contributions to the improvement of the manufacturing processes of airbags for automotive using aspects of quality engineering* (in Romanian) at the Polytechnic Univ. of Timisoara, **2023–2027**. Supervisor: Prof. V.-F. Duma.
- **Bogdan-Pavel Negrei, Eng.:** *Machine learning and AI algorithms for inspection of airbags manufacturing processes* (in Romanian) at the Polytechnic Univ. of Timisoara, **2023–2027**. Supervisor: Prof. V.-F. Duma.
- **Yosef Quitt, Eng.:** *Device for measuring the level of water correlated to the ascertainment of the relative levels of characteristic points in the shore areas* (in Romanian) at the Polytechnic Univ. of Timisoara, **2023–2027**. Supervisor: Prof. V.-F. Duma.
- **Andrei Maldar, Eng.:** *Optimal programming and use of galvanometer- Micro-Electro-Mechanical Systems (MEMS)-based laser scanners with oscillatory mirrors* (in Romanian) at the Polytechnic Univ. of Timisoara, **2022–2026**. Supervisor: Prof. V.-F. Duma.
- **Carina Neagu, MD:** *Optimization of some properties of dental adhesives through the inclusion of magnetic nanoparticles* (in Romanian) at the “Victor Babes” Univ. of Medicine and Pharmacy of Timisoara, **2020–2024**. Main supervisor: Prof. C. Sinescu, MD; Cotutelle supervisor: Prof. V.-F. Duma.
- **Eduard-Sebastian Csukas, Eng.:** *Applications of the Finite Element Analysis (FEA) for the study of optomechatronic modulators* (in Romanian) at the Polytechnic Univ. of Timisoara, **2016–2024**. Supervisor: Prof. V.-F. Duma.

### Completed/Defended

- ✓ **Codruta Andreea Cojocariu (Novac), MD:** *Modern approaches in dental impression technique* (in Romanian) at the “Victor Babes” Univ. of Medicine and Pharmacy of Timisoara, **2018–2024**. Main supervisor: Prof. C. Sinescu, MD; Cotutelle supervisor: Prof. V.-F. Duma.
- ✓ **Alexandru-Lucian Dimb, Eng.:** *Contributions to the study of laser scanners with Risley prisms for Optical Coherence Tomography (OCT), with applications in industrial measurements* (in Romanian) at the Polytechnic Univ. of Timisoara, **2019-2023**. Supervisor: Prof. V.-F. Duma.
- ✓ **Ralph-Alexandru Erdelyi, Phys.:** *Biomedical imaging in dentistry using a range of investigation techniques, with a focus on optical coherence tomography (OCT)*, (in Romanian), at the Polytechnic University of Timisoara, **2018–2023**. Supervisor: Prof. V.-F. Duma.
- ✓ **Alexandra Maroiu, MD:** *Study on the influence of a novel design of dental veneers on the longevity and predictability of modern prosthetic treatment*, “Victor Babes” Univ. of Medicine and Pharmacy of Timisoara, **2017–2023**. Main supervisor: Prof. M. Rominu, MD; Cotutelle supervisor: Prof. V.-F. Duma.
- ✓ **Alin-Gabriel R. Gabor, MD:** *Contributions to methods of bone augmentation* (in Romanian), “Victor Babes” Univ. of Medicine and Pharmacy of Timisoara, Romania, **2015–2020**. Main supervisor: Prof. C. Sinescu, MD; Cotutelle supervisor: Prof. V.-F. Duma.

### PostDoc Researchers supervised

- **Dr. Alexandru-Lucian Dimb, Eng.:** at the Polytechnic University of Timisoara, **2024–Present**.
- **Dr. Ralph-Alexandru Erdelyi, Phys.:** at the Polytechnic University of Timisoara, **2024–Present**.
- **Dr. Roxana Mariana Beiu, Eng.:** at the “Aurel Vlaicu” University of Arad, **2016–2021**.
- **Dr. Corina Anca Mnerie, Eng.:** at the “Aurel Vlaicu” University of Arad, **2012–2023**.

### Master Dissertations supervised

- **Univ. Aurel Vlaicu Arad:** Andrei Maldar (2022); Atilla Csillag (2023); Atilla Teodorovits (2024).
- **Univ. of Kent, UK:** Philippa Law (co-supervision of Master Thesis, 2014 – 1<sup>st</sup> award in the year).
- **West Univ. of Timisoara** - co-supervision of Master Thesis: T. Nicola (2015); C. Untea-Mare (2016); R. Erdelyi (2019).



## MISCELLANEOUS

2021, Expert in the panel of the domain *Digitalization, Industry and Space*, within Romania's *Strategic Research Agenda* for 2021-2027, organized by UEFISCDI;

2015-2018, Awards for results in research—from the Polytechnic Univ. of Timisoara (total: 1.8 k€);

2014, Article <http://dx.doi.org/10.1177/0954411914543963> highlighted in OCT News-Feature of the Week 10/5/14: <http://www.octnews.org/articles/5612435/feature-of-the-week-10-5-14-design-and-testing-of/>

2013, Responsible for the *Thank You Fulbright* Program (launched by the Fulbright Association) in Romania;

2010, June, Summer Courses (49<sup>th</sup> Annual Series), [The Institute of Optics](#), Univ. of Rochester, NY (USA);

2009-2010, Participation at weekly Optics Colloquia, The Institute of Optics, Univ. of Rochester, NY (USA);

2010, Optical Instrumentation (PhD Course attended, 1 sem.), Univ. of Rochester (USA), Prof. J.P. Rolland;

2010, March, COMSOL Multiphysics Modeling Training, Rochester (USA);

2010, April, Visit and Seminars-for Fulbright Fellows, attended at the UN Headquarters, NY;

President of Maturity Exam Commissions (in Romanian High Schools): Drobeta Turnu-Severin 2003, Craiova 2008, Satu Mare 2009, Cugir 2011 (3 weeks, in June-July);

## SYMPOSIA PARTICIPATION

### International:

- 25<sup>th</sup> Congress of the Int. Commission for Optics (ICO), <https://www.ico25.org/>, Dresden (Germany), **2022**;
- Int. Conf. [Advances in 3OM: Opto-Mechatronics, Opto-Mechanics and Optical Metrology](#), SPIE-affiliated [ISI], Timisoara (Romania), **2021, 2023**;
- [Mexican Optics and Photonics Meeting](#) (MOPM), Mexico **2021**;
- [SPIE Optics + Photonics](#), [ISI], San Diego (USA) **2021, 2022**;
- SPIE Security & Defence and Remote Sensing [ISI], Berlin (Germany) **2018**, Strasbourg (France) **2019**, Amsterdam (Netherlands) **2023**, Edinburgh (UK) **2024**;
- SPIE Nuclear Photonics [ISI], Brasov (Romania) **2018**;
- Annual Conf. of European Prosthodontic Association ([EPA](#)), Bucharest (Romania), **2017**;
- Annual Meeting of the European Society for Biomaterials (ESB), Athens (Greece) **2017**;
- Central & East. European Conf. for Thermal Analysis & Calorimetry (CEEC), Chisinau (Moldova) **2017**;
- SPIE Applied Optics and Photonics (AOP) [ISI], Faro (Portugal) **2017**;
- OSA Frontiers in Optics, Rochester, NY (USA) **2016**;
- Biommedd, Constanta **2016**, Cluj-Napoca (Romania) **2018**;
- SPIE ATOM-N [ISI], Constanta (Romania) **2016**;
- Advanced Electromagnetics Symposium (AES), Malaga (Spain) **2016**, Incheon-Seoul (Korea) **2017**, Lisbon (Portugal) **2019**; Marrakesh (Morocco) **2022**, Torremolinos (Spain) **2023**;
- SPIE Optifab [ISI], Rochester, NY (USA) **2015, 2017**;
- Optics & Photonics Applications (OPA) Conf., Univ. of Guanajuato, Salamanca (Mexico), **2015**;
- Int. Seminar on Biomat. and Regenerative Med. ([BioRemed](#)), Oradea **2015**, Timisoara (Romania) **2017**;
- Balkan Stomatological Society (BASS) Congress, Bucharest (Romania) **2015**;
- SPIE Medical Imaging [ISI], Orlando (USA) **2015**;
- SPIE Optics + Optoelectronics [ISI], Prague (Czech Republic) **2015, 2017, 2019**;
- SRLS & SPIE Int. Conf. Lasers in Medicine [ISI], Timisoara **2013**, Bucharest **2015**, Timisoara **2017**, Constanta **2018**, Oradea (Romania) **2023**;
- New York Great Dental Meeting, NY (USA) **2014**;
- SPIE RIAO-OPTILAS (VIII Iberoamerican Conf. on Optics & XI Latinamerican Meeting on Optics, Lasers and Applications) [ISI], Porto (Portugal) **2013**;
- SPIE ISPDI 5<sup>th</sup> Int. Symposium on Photoelectronic Detection and Imaging [ISI], Beijing (China) **2013**;
- SPIE ETOP (Education and Training in Optics and Photonics) [ISI], Porto (Portugal) **2013**;
- ISEMMS (Int. Symposium on Education in Mechanism & Machine Science) [ISI] Madrid (Spain) **2013**;
- MeTrApp: 1<sup>st</sup> Workshop on Mechanisms, Transmissions and Applications, Timisoara (Romania) **2011**;
- WSF-World Science Forum (Member of the Fulbright Alumni delegation), Budapest (Hungary) **2011**, Rio de Janeiro (Brasil) **2013**, Budapest **2015**, Dead Sea Resort (Jordan) **2017**, Budapest **2019**;
- EUCOMES - European Conf. on Mechanism Science, Cluj-Napoca (Romania) **2010**, Nantes (France) **2016**;
- Fulbright Conf. (CIES): Linking Campus to Community (Georgetown Univ.), Washington DC (USA) **2010**;
- SPIE Photonics West (BIOS, OPTO) [ISI], San Francisco (USA) **2010, 2013-2015, 2017, 2018**;
- IA-Industrial Assoc. Meeting, The Institute of Optics, Univ. of Rochester, NY (USA) **2009, 2010**;
- IBWAP: Int. Balkan Workshop in Applied Physics, Constanta (Romania) **2009, 2014, 2018**;
- ROCAM: Romanian Conf. on Advanced Materials, Brasov (Romania) **2009**;

- SPIE Canterbury OCT and AO Workshop [ISI], Kent (UK) **2008, 2017**;
- SPIE Optical Systems Design [ISI], Glasgow (UK) **2008**, Jena **2015**, Frankfurt (Germany) **2018**, Madrid (Spain) **2021**, Strasbourg (France) **2024**;
- CARE (Coordinated Actions for Robotics in Europe) Consensus Meetings, Stuttgart (Germany) **2008**;
- SPIE Photonics Europe [ISI], Brussels (Belgium) **2012, 2014**; Strasbourg (France) **2008, 2018, 2020, 2022, 2024**;
- DSTA Conf. (Dynamic Systems Theory & Applications) [ISI], Lodz (Poland) - every other year, since **2007**;
- Intl. DAAAM Symposia [ISI], Zadar (Croatia) **2007**, Vienna (Austria) **2009**;
- 2<sup>nd</sup> European Optical Society (EOS) Topical Meeting, Optical Micro-Systems (O $\mu$ S), Capri (Italy) **2007**;
- 12<sup>th</sup> IFToMM Word Congress (Int. Federation for the Promotion of the Theory of Mechanisms and Machines), Besancon (France) **2007**;
- IEEE ODIMAP (5<sup>th</sup> Topical Meeting on Optoelectronic Dist./Displ. Meas. & Appl.), Madrid (Spain) **2006**;
- SPIE ROMOPTO: Micro-to Nano-Photonics [ISI], Sibiu **2006, 2009**, Bucharest (Romania) **2015**;
- 1<sup>st</sup> IIW South-East European Welding Congress, Timisoara (Romania) **2006**;
- Int. Conf. VSU, Sofia (Bulgaria) **2006, 2007**;
- LASER–Word of Photonics Congress (at different OSA & SPIE Conferences) [ISI], Munchen (Germany) **2005, 2009, 2011, 2013, 2017, 2023**;
- PAMM (Pannonian Appl. Math. Meetings), PC 149-150 Timisoara **2004**, PC 154 Ballaton (Hungary) **2007**;
- 5<sup>th</sup> Int. Conf. of Metrology, Bucharest (Romania) **2001**;
- 1<sup>st</sup> Int. Symposium of Complementary Medicine of 3<sup>rd</sup> Millenium, Oradea (Romania) **2000**;
- ETC–Int. Electronics and Communications Symposium, Timisoara (Romania) **1998**;
- Mess Comp. '95 (9 Kongreßmesse für Industrielle Meßtechnik), Wiesbaden (Germany) **1995**;
- Conf. on Fine Mech., Opt. & Mechatronics (COMEFIM), Bucharest **1994, 1998**, Cluj-Napoca **2006**;
- SIOEL–Optoelectronics Int. Conf., Bucharest (Romania) **1993, 2004**;
- IFToMM Int. Symposium on the Theory of Machines and Mechanisms – SYROM, Bucharest **1993, 2001, 2005**, Brasov (Romania) **2009** [ISI], **2013**;
- I Congreso Iberoamericano de Ingenieria Mecanica, Madrid (Spain) **1993**.

#### **National (Romania):**

- 3OM Workshop in Optomechatronics and Biomedical Imaging, Arad (Romania) **2019, 2021, 2023**;
- [RoMAT2016](#), Bucharest (Romania), **2016**;
- Int. Conf. *Advances in Engineering & Management* (ADEM), Severin (Romania) **2016, 2020**;
- Diaspora in Scientific Research and Higher Education in Romania, Timisoara **2016**;
- National Seminar on Mechanisms, Craiova **2008**, Timisoara **2009**, Tg. Mures **2010**;
- EUROP-RO Symposia, Bucharest April **2007**, Sept. **2007**;
- Universitaria Simpro, Petrosani **2006**;
- Modeling and Optimization in the Machine Building Field - MOCM 11, Bacau (Romania) **2005**;
- ISREIE (Aurel Vlaicu Univ. of Arad Symposia) - every two years, since **1996**;
- National Industrial Robots Symposia, Timisoara **1992, 1996**, Oradea **2000**;
- Mechanisms and Mechanical Transmissions Symposia (MTM), Timisoara **1992, 1996, 2000**;
- 17<sup>th</sup> Symposium of the Military Technical Academy, Bucharest **1997**;
- *Nature and Man* Life Science Museum Symposia, Ploiesti **1994, 1995, 1997**;
- *Man and Mountain* Symposia, Voineasa **1993**, Ramnicu Valcea **1994**;
- Univ. of Oradea Symposium, Oradea **1994, 2007**.

## List of Publications

<http://www.researcherid.com/rid/B-3031-2010>

*h-index = 25 (ISI Web of Science)*

[https://www.researchgate.net/profile/Virgil-Florin\\_Duma](https://www.researchgate.net/profile/Virgil-Florin_Duma)

### Papers in Journals indexed in ISI Web of Science ( $\Sigma$ ISI Impact Factor (IF) = 146.687)<sup>2</sup>

69. M.C. Langă, D.F. Nica\*, V.-F. Duma\*, R.E. Heredea, C. Sinescu, Dentigerous Cysts in Children: Clinical, Radiological, and Healing Aspects, *Medicina-Lithuania* **60**(7), 1133 (2024); ISSN 1648-9144; <https://doi.org/10.3390/medicina60071133>; **IF 2.4**; **Q1**
68. I.-R. Munteanu, R.-E. Luca\*, E. Hogeia, R.-A. Erdelyi, **V.-F. Duma\***, L. Marsavina, A.-L. Globasu, G.-D. Constantin, D.C. Todea, Microbiological and Imaging-Based Evaluations of Photodynamic Therapy Combined with Er:YAG Laser Therapy in the In Vitro Decontamination of Titanium and Zirconia Surfaces, *Microorganisms* **12**(7), 1345 (2024); eISSN 2076-2607; <https://doi.org/10.3390/microorganisms12071345>; **IF 4.1/2023**; **Q2**
67. L. Popescu, E.L. Crăciunescu\*, A.C. Novac, M.L. Negruțiu, **V.-F. Duma**, A Tudor, A. Mostovei, D. Jumanca, C. Sinescu, Nutritional profiling and sensory evaluation of novel hot chocolate recipes: a comparative study with a commercial brand, *Romanian J. of Oral Rehabilitation* **16**(2), 197-203 (2024); ISSN 2066-7000; **IF 0.6/2023**; DOI: 10.6261/RJOR.2024.2.16.19; **Q4**
66. A.C. Novac, A. Tudor\*, D.M. Pop, C.S. Neagu, E.L. Craciunescu, M. Rominu, M.L. Negrutiu, **V.-F. Duma\***, C. Sinescu, Conventional dental impressions vs. impressions reinforced with rigid mouthguards, *Polymers* **16**(7), 994 (2024); ISSN 2073-4360; <https://doi.org/10.3390/polym16070994>; **IF 4.7/2023**; WOS:001201615100001; **Q1**
65. A.C. Novac, D.M. Pop\*, A. Tănase, C. Zaharia, E.L. Crăciunescu, M. Romînu, M.L. Negruțiu, **V.-F. Duma**, C. Sinescu, The advantages of the implementation of digital flow in the working time management of dental prostheses restorations, *Romanian J. of Oral Rehabilitation* **15**(4), 75-81 (2023); ISSN 2066-7000; **IF 0.6**; <http://rjor.ro/2023/12pdf>; **Q4**
64. A.C. Novac, V. Filip, D. Negrut, I. Moldovan, D.M. Pop\*, A. Tănase, C. Zaharia, E.L. Crăciunescu, M.L. Negruțiu, M. Romînu, **V.-F. Duma**, C. Sinescu, Time assessment in classical vs digital impressions, *Romanian J. of Oral Rehabilitation* **15**(4), 494-500 (2023); ISSN 2066-7000; <http://rjor.ro/2023/12/1 pdf>; **IF 0.6**; **Q4**
63. A.-C. Măroiu<sup>#</sup>, A. Jivănescu\*, D.-A. Șerban, R.-M. Negru<sup>#</sup>, **V.-F. Duma\***, C. Sinescu, M. Romînu, The influence of a novel, crenelated design of CAD-CAM ceramic veneers on the debonding strength, *Materials* **16**(10), 3694 (2023); EISSN 1996-1944; <https://doi.org/10.3390/ma16103694>; **IF 3.1**; **Q1**
62. M. Mostovei\*, O. Solomon, N. Chele, C. Sinescu, **V.-F. Duma\***, A. Mostovei, Electromyographic evaluation of muscle activity in patients rehabilitated with full arch fixed implant-supported prostheses, *Medicina-Lithuania* **59**(2), 299 (2023); ISSN 1648-9144; <https://doi.org/10.3390/medicina59020299>; **IF 2.4**; **Q1**
61. A.-L. Dimb, **V.-F. Duma\***, Symmetries of Scan Patterns of Laser Scanners with Rotational Risley Prisms, *Symmetry-Basel* **15**(2), 336 (2023); ISSN 2073-8994; <https://doi.org/10.3390/sym15020336>; **IF 2.2**; **Q2**
60. A. Cioabla, **V.-F. Duma\***, C. Mnerie, R.-A. Erdelyi, G.M. Dobre, A. Bradu, A. Podoleanu, Effect of an Anaerobic Fermentation Process on 3D-printed PLA Materials of a Biogas-generating Reactor<sup>3</sup>, *Materials* **15**(23), 8571 (2022); EISSN 1996-1944; <https://doi.org/10.3390/ma15238571>; **IF 3.4**; **Q2**
59. E.T. Stoica, C. Marcauteanu\*, A. Tudor, **V.-F. Duma\***, E.C. Amaricai, R. Onofrei, O. Suciuc, M.-L. Negruțiu, C. Sinescu, Influence of the Text Neck Posture on the Static Dental Occlusion, *Medicina-Lithuania* **58**(9), 1303 (2022); ISSN 1648-9144; <https://doi.org/10.3390/medicina58091303>; **IF 2.6**; **Q3**
58. A.G. Gabor, **V.-F. Duma\***, M.M.C. Fabricky, L. Marsavina, A. Tudor, C. Vancea, P. Negrea, C. Sinescu\*, Ceramic Scaffolds for Bone Augmentation: Design and Characterization with SEM and Confocal Microscopy, *Materials* **15**(14), 4899 (2022); EISSN 1996-1944; <https://doi.org/10.3390/ma15144899>; **IF 3.4**; **Q2**
57. **V.-F. Duma\***, M.-A. Duma, Optomechanical Analysis and Design of Polygon Mirror-Based Laser Scanners, *Applied Sciences* **12**(11), 5592 (2022); ISSN 2076-3417; **IF 2.7**; <https://doi.org/10.3390/app12115592>; **Q2**
56. L. Orel, O.-A. Velea-Barta, C. Sinescu, **V.-F. Duma**, L.-M. Nica\*, R.M. Horhat, R.D. Chirila, A. Tudor, D.D. Vulcanescu, M.L. Negrutiu, Comparative Assessment of the Shaping Ability of Reciproc Blue, WaveOne Gold, and ProTaper Gold in Simulated Root Canals, *Materials* **15**(9), 3028 (2022); EISSN 1996-1944; <https://doi.org/10.3390/ma15093028>; **IF 3.4**; **Q1**

<sup>2</sup> The corresponding author of the papers with multiple authors is indicated by the sign \*

<sup>3</sup> [Materials | Editor's Choice Articles in 2022 in the Section "Optics and Photonics" \(mdpi.com\)](#)



55. C. Serban, D. Lungeanu\*, S.-D. Bota, C.C. Cotca, M.L. Negrutiu, **V.-F. Duma**, C. Sinescu, E.L. Craciunescu, Emerging Technologies for Dentin Caries Detection—A Systematic Review and Meta-Analysis. *J. of Clinical Medicine* **11**(3), 674 (2022). EISSN 2077-0383; <https://doi.org/10.3390/jcm11030674>; **IF 3.9**; **Q2**
54. M.-M. Togoe, E.-L. Craciunescu\*, F.-I. Topala, C. Sinescu, L.M. Nica, C. Ionita, **V.-F. Duma**, M. Rominu, A. Gh. Podoleanu, M.-L. Negrutiu, Endodontic fillings evaluated using en face OCT, microCT and SEM, *Romanian J. of Morphology and Embryology* **62**(3), 793-780 (2021), ISSN 1220–0522, **IF 0.833**; [DOI: 10.47162/RJME.62.3.17](https://doi.org/10.47162/RJME.62.3.17); **Q4**
53. D.F. Nica, A.G. Gabor, **V.-F. Duma\***, V.G. Tudericu, A. Tudor, C. Sinescu, Sinus Lift and Implant Insertion on 3D Printed Polymeric Maxillary Models: Ex vivo training for in vivo surgical procedures, *J. of Clinical Medicine* **10**(20), 4718 (2021); EISSN 2077-0383; <https://doi.org/10.3390/jcm10204718>; **IF 4.964**; **Q2**
52. **V.-F. Duma\***, A.-L. Dimb, Exact Scan Patterns of Rotational Risley Prisms Obtained with a Graphical Method: Multi-Parameter Analysis and Design<sup>4</sup>, *Applied Sciences* **11**(18), 8451 (2021); ISSN 2076-3417; **IF 2.838**; <https://doi.org/10.3390/app11188451>; **Q2**
51. L. Orel, O.-A. Velea-Barta\*, L.-M. Nica\*, A.-S. Boscornea-Puscu, R.M. Horhat, R.-M. Talpos-Niculescu, C. Sinescu, **V.-F. Duma**, D.-D. Vulcanescu, F. Topala, M.-L. Negruțiu, Evaluation of the Shaping Ability of Three Thermally Treated Nickel–Titanium Endodontic Instruments on Standardized 3D-printed Dental Replicas Using Cone-Beam Computed Tomography, *Medicina-Lithuania* **57**(9), 901 (2021); ISSN 1648-9144; <https://doi.org/10.3390/medicina57090901>; **IF 2.948**; **Q3**
50. A.-S. Boscornea-Pușcu, L. Orel, O.-A. Velea-Barta\*, R.M. Horhat, M.-L. Negruțiu, L.M. Nica, **V.-F. Duma\***, D.I. Stoia, C. Opreș, C. Sinescu, Experimental study on the effects of torsional loading of three Ni-Ti endodontic instruments, *Applied Sciences* **11**(16), 7224 (2021); ISSN 2076-3417; <https://doi.org/10.3390/app11167224>; **IF 2.838**; **Q2**
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#### Conference Oral Presentations and Posters (with Published Abstracts, without Proceeding Papers)

- **V.-F. Duma\***, Analyses and optimizations of galvanometer laser scanning, *SPIE Sensors + Imaging*, Edinburgh (UK), Sept. 16-19, **2024**; (Oral Presentation);
- M.-A. Duma, **V.-F. Duma\***, Experimental study of laser scanning heads with refractive polygons, *SPIE Optical Systems Design*, Strasbourg (France), Apr. 7-11, **2024**; (Poster);
- M.-S. Duma, D. Drimbe, R.-A. Erdelyi, **V.-F. Duma\***, I. Moldovan, A.-M. Heredea, E.R. Heredea, D.M. Pop, C. Sinescu, OCT for studying decontamination techniques of Dental Medicine equipment, *Biomedical Spectroscopy, Microscopy, and Imaging III – COST PhoBioS WS (SPIE Photonics Europe)*, Strasbourg (France), Apr. 7-11, **2024**; (Poster);
- **V.-F. Duma\***, C. Sinescu, A. Bradu, A. Podoleanu, OCT-based beneath-the-surface investigations in ceramics sintering: modeling for the most relevant characteristic parameter, *Proc. SPIE PC13006, PC130060Y, Biomedical Spectroscopy, Microscopy, and Imaging III– COST PhoBioS WS (SPIE Photonics Europe)*, Strasbourg (France), Apr. 7-11, **2024**; <https://doi.org/10.1117/12.3027313>; (Oral Presentation);
- **V.-F. Duma**, 3OM Optomechatronics Group: Research and Projects, *COST PhoBioS Workshop at SPIE Photonics Europe*, Strasbourg (France), Apr. 8-10, **2024** (Oral Presentation)
- A. Maldar, **V.-F. Duma\***, Programming and experiments of scan patterns performed with a 2D MEMS laser scanner, *2<sup>nd</sup> Int. Conf. Advances in 3OM: Opto-Mechatronics, Opto-Mechanics, and Optical Metrology*, Timisoara (Romania), Dec. 11-14, **2023** (Poster)
- E.S. Csukas, **V.-F. Duma\***, Optomechanical choppers with rotational shafts, *2<sup>nd</sup> Int. Conf. Advances in 3OM: Opto-Mechatronics, Opto-Mechanics, and Optical Metrology*, Timisoara, **2023** (Oral Presentation)
- M.-S. Duma, R.-A. Erdelyi, **V.-F. Duma\***, A.-M. Heredea, E.R. Heredea, C. Sinescu, Biofilm imaging in dentistry using OCT and microbiology, *2<sup>nd</sup> Int. Conf. Advances in 3OM: Opto-Mechatronics, Opto-Mechanics, and Optical Metrology*, Timisoara (Romania), Dec. 11-14, **2023** (Poster)
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- A. Csillag, **V.-F. Duma\***, Raster, spiral, Risley prisms-based, and Lissajous laser scanning modalities, *2<sup>nd</sup> Int. Conf. [Advances in 3OM: Opto-Mechatronics, Opto-Mechanics, and Optical Metrology](#)*, Timisoara (Romania), Dec. 11-14, **2023** (Poster)
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- C. Mnerie, **V.-F. Duma\***, Galvanometer scanners for biomedical imaging: Control structures, *SPIE Photonics Europe (Optics, Photonics and Digital Technologies for Imaging Applications VII)*, Strasbourg (France), Apr. 3-7, **2022** (Poster)
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- R.-A. Erdelyi, **V.-F. Duma\***, C. Sinescu, G. Dobre, A. Bradu, A. Podoleanu, Dental radiography optimization using OCT, *SPIE Photonics Europe (Biomedical Spectroscopy, Microscopy, and Imaging II)*, Strasbourg (France), Apr. 3-7, **2022** (Oral Presentation)
- Serban C., Serban H., Negrutiu M.L., Topala F.I., **Duma V.-F.**, Sinescu C., Podoleanu A., Analysis of Root Canal Filling Voids Using Optical Coherence Tomography, *Int. Congress of Dental Medicine for Students and Young Dentists "DENTis"*, Mar. 26, **2021**, Cluj-Napoca (Romania)
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- Serban C., Serban H., Hategan S.I., Negrutiu M.L., **Duma V.-F.**, Sinescu C., Podoleanu A., Image processing techniques to optical coherence tomography images of adhesives interfaces, *Int. Symposium of Dentistry "Napoca Biodent"* ([link](#)), Nov. 5, **2021**, Cluj-Napoca (Romania)
- C.S. Neagu, A.C. Cojocariu, C. Zaharia, M. Romînu, M.-L. Negruțiu, **V.-F. Duma**, C. Sinescu, The evaluation of dental adhesives reinforced with magnetic nanoparticles, *10th Int. Symposium "Napoca Biodent"* ([link](#)), Nov. 5-6, **2021**
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- A. Maldar, **V.-F. Duma\***, Optimization of Thermo-Electric Cooler (TEC) cells, *1<sup>st</sup> Int. Conf. Advances in 3OM: Opto-Mechatronics, Opto-Mechanics and Optical Metrology*, Timisoara (Romania), Dec. 13-16, **2021** (Poster)
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- **Duma V.-F.**, Laser scanners with rotational polygon mirrors: A multi-parameter optomechanical analysis and optimization, *16th Int. Conf. of Dynamical Systems. Nonlinear Dynamics and Control (DSTA 2021)*, Awrejcewicz J., Chair, Łódź (Poland), **2021** (Oral Presentation); <https://doi.org/10.34658/9788366741201>
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- M.S. Duma, **V.-F. Duma\***, Optical choppers working with laser lines, *SPIE Optics + Optoelectronics*, Prague (Czechia), Apr. 1-4, **2019** (Poster)
- **Duma V.-F.**, Optomechatronic disk choppers with generalized window profiles: Ascertainment and multi-parameter analysis of non-linear transmission functions, *15th Int. Conf. of Dynamical Systems. Nonlinear Dynamics and Control (DSTA)*, Awrejcewicz J., Chair, Łódź (Poland), Dec. 2-5, **2019** (Oral Presentation)
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