

Curriculum vitae

Europass



Nume / Prenume

Duma Virgil-Florin

Adrese

Universitatea "Aurel Vlaicu" din Arad
Facultatea de Inginerie

Sites: <http://3om-group-optomechatronics.ro/>

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Naționalitate

română

Data nașterii

4 Iulie 1967

Sex

masculin

Locul de muncă / Domeniul ocupațional

Profesor universitar Dr.-habil. inginer

Învățământ superior și cercetare științifică

(plus management în învățământul superior și în cercetare)

Experiența profesională

Perioada

2024 - Prezent

Funcția sau postul ocupat

Profesor asociat

Activități și responsabilități principale

Cercetare științifică

Numele și adresa angajatorului

National University of Science and Technology POLITEHNICA Bucharest (Romania)

Tipul activității sau Sector de activitate

Center of Research and Development for Mechatronics (CETTI)

Perioada

2016 - Prezent

Funcția sau postul ocupat

Profesor asociat

Activități și responsabilități principale

Predare ore Master International [Emdola](#) (în limba engleză); coordonare dizertații de Master;

Numele și adresa angajatorului

Univ. de Medicină și Farmacie „Victor Babeș” Timisoara, România

Tipul activității sau Sector de activitate

Facultatea de Stomatologie

Perioada

2015 - Prezent

Funcția sau postul ocupat

Profesor asociat

Activități și responsabilități principale

Cercetare științifică

Numele și adresa angajatorului

Univ. de Medicină și Farmacie „Victor Babeș” Timisoara, România

Tipul activității sau Sector de activitate

Research Center in Dental Medicine Using Conventional and Alternative Technologies, Department of Prostheses Technology and Dental Materials

Perioada

2014 - Prezent

Funcția sau postul ocupat

Profesor asociat

Activități și responsabilități principale

Predare ore Master (în limba engleză); coordonare dizertații de Master;

Numele și adresa angajatorului

Univ. de Vest Timisoara, România

Tipul activității sau Sector de activitate

Facultatea de Fizică

Perioada

2014 - Prezent

Funcția sau postul ocupat

Profesor asociat – Conducător de doctorat

Activități și responsabilități principale

Conducere doctorat - Domeniul Inginerie Mecanică, http://www.upt.ro/img/files/2014-2015/admitere/doctorat/oferte/Oferta_doctorala_2015-DUMA.pdf

Numele si adresa angajatorului	Univ. "Politehnica" Timisoara, România
Perioada	2014 – Prezent
Funcția sau postul ocupat	SPIE Visiting Lecturer
Numele si adresa angajatorului	Int. Society for Optics and Photonics, Bellingham, WA, USA (SPIE)
Perioada	2013 - Prezent
Funcția sau postul ocupat	Visiting Scientist , The Institute of Optics, <i>Univ. of Rochester</i> , NY, SUA (#1 in Optics in SUA) http://www.odalab-spectrum.org/Rochester/People.html
Perioada	2012
Funcția sau postul ocupat	Consilier ministerial
Perioada	2009-2010
Funcția sau postul ocupat	Senior Fulbright Research Fellow
Activități și responsabilități principale	Cercetare științifică (Predare – în secundar)
Numele si adresa angajatorului	US Dept. of State – Grant, The Institute of Optics, <i>Univ. of Rochester</i> , NY, SUA (#1 in Optics in SUA)
Tipul activitatii sau Sector de activitate	Cercetare științifică în Optomecatronică și Optică Biomedicală-OCT (Optical Coherence Tomography)
Perioada	2009 - Prezent
Funcția sau postul ocupat	Honourary Professor și membru al Elliot College
Activități și responsabilități principale	Cercetare științifică
Numele si adresa angajatorului	School of Physical Sciences (Applied Optics Group), <i>University of Kent, Canterbury</i> (UK) http://www.kent.ac.uk/physical-sciences/research/aog/
Tipul activitatii sau Sector de activitate	Cercetare științifică - Applied Optics și Biomedical Optics in OCT (Optical Coherence Tomography)
Perioada	2006 - Prezent
Funcția sau postul ocupat	Profesor universitar
Activități și responsabilități principale	Cursuri, seminarii, lucrări de laborator, coordonare lucrări de diplomă; Cercetare științifică, conducere Proiecte de cercetare naționale și internaționale
Numele si adresa angajatorului	Dept. Design de Produs (DP) & AAMR, Facultatea de Inginerie, Univ. "Aurel Vlaicu" din Arad, Romania
Tipul activitatii sau Sector de activitate	Cursuri, seminarii și lucrări de laborator la (selecție): Mecanisme, Instrumentație [optoelectronică], Sisteme de scanare 3D, Optimizări, Ingineria calității, Inginerie biomedicală, Dezvoltarea echipamentelor industriale, Metodologia cercetării științifice – la Licență Sisteme de calitate, Ingineria și aplicațiile laserilor, Managementul proiectelor de cercetare - Master Cercetare științifică (inclusiv management granturi științifice), coordonare proiecte de diplomă; Invățământ superior
Perioada	2002 - 2006
Funcția sau postul ocupat	Conferențiar universitar
Activități și responsabilități principale	Cursuri, seminarii, lucrări de laborator, coordonare lucrări de diplomă; Cercetare științifică
Numele si adresa angajatorului	Catedra DP & AAMR, Facultatea de Inginerie, Univ. "Aurel Vlaicu" din Arad, Romania
Tipul activitatii sau Sector de activitate	Cursuri, seminarii și lucrări de laborator la Mecanisme și Sisteme mecanice [de măsurare], Cercetare științifică (inclusiv management granturi științifice), conducere proiecte de diplomă; coordonare practică productivă, decan de an; Invățământ superior
Perioada	1999 - 2002
Funcția sau postul ocupat	Șef de lucrări
Activități și responsabilități principale	Cursuri, seminarii, lucrări de laborator, coordonare lucrări de diplomă; Cercetare științifică
Numele si adresa angajatorului	Catedra DP & AAMR, Facultatea de Inginerie, Univ. "Aurel Vlaicu" din Arad, Romania
Tipul activitatii sau Sector de activitate	Cursuri, seminarii și lucrări de laborator la Mecanisme; Cercetare științifică; coordonare practică productivă; Invățământ superior
Perioada	1997 - 2001
Funcția sau postul ocupat	Șef de lucrări
Activități și responsabilități principale	Cursuri, seminarii, lucrări de laborator, proiecte; Cercetare științifică

Numele si adresa angajatorului	Catedra de Organe de Mașini și Mecanisme, Facultatea de Mecanică, Univ. "Politehnica" din Timișoara
Tipul activitatii sau Sector de activitate	Cursuri, seminarii și lucrări de laborator la Mecanisme, Aparate de măsură și control; Cercetare științifică, conducere proiecte de diplomă, coordonare practică productivă; Invățământ superior
Perioada	1994 - 1997
Funcția sau postul ocupat	Asistent universitar
Activități și responsabilități principale	Seminarii, lucrări de laborator, proiecte; Cercetare științifică
Numele si adresa angajatorului	Catedra de Organe de Mașini și Mecanisme, Facultatea de Mecanică, Univ. "Politehnica" Timișoara
Tipul activitatii sau Sector de activitate	Seminarii, lucrări de laborator și proiecte la Aparate și sisteme de măsurare, Calculul și construcția aparatelor optice; Cercetare științifică, conducere proiecte de diplomă, coordonare practică productivă; Invățământ superior
Perioada	1991 - 1994
Funcția sau postul ocupat	Preparator universitar
Activități și responsabilități principale	Seminarii, lucrări de laborator, proiecte; Cercetare științifică
Numele si adresa angajatorului	Catedra de Organe de Mașini și Mecanisme, Facultatea de Mecanică, Univ. "Politehnica" Timișoara
Tipul activitatii sau Sector de activitate	Cursuri, seminarii și lucrări de laborator la Aparate și sisteme de măsurare, Calculul și construcția aparatelor optice, Optică tehnică, Aparate spectro-fotometrice; Cercetare științifică, coordonare practică productivă; Invățământ superior
Educație și formare	
Perioada	2013
Calificarea / diploma obținută	Abilitare / Conducere doctorat – domeniul Inginerie mecanică, mecatronică și robotică
Disciplinele principale studiate / competențe profesionale dobândite	Titlul tezei de abilitare: "Optomechatronic Modulators: Choppers, Attenuators and Scanners. Analysis and Design" Președinte Comisie de abilitare: Acad. Dr. Fiz. Valentin Vlad (Președinte Academia Română); Membri: Prof. N. Puscas (UPB), Prof. J.P. Huignard (Institute Lavoisier, France), Dr. G. Perrone (Univ. Torino, Italy).
Numele și tipul instituției de învățământ	Univ. "Politehnica" din București, România
Perioada	1994 - 2001
Calificarea / diploma obținută	Doctor în Științe Inginerești
Disciplinele principale studiate / competențe profesionale dobândite	Titlul tezei de doctorat: "Contribuții la analiza și sinteza sistemelor de scanare", coordonator științific Prof. Dr. ing. Dan Perju
Numele și tipul instituției de învățământ	Univ. "Politehnica" din Timișoara, Facultatea de Mecanică, România
Nivelul în clasificarea națională sau internațională	Nivel superior, calificativul cum laude
Perioada	1986-1991
Calificarea / diploma obținută	Inginer diplomat (1985-1986 efectuare stagiul militar, Termen redus)
Disciplinele principale studiate / competențe profesionale dobândite	Mecanică fină și optică Media generală 9,84, cu nota 10 la lucrarea de diplomă: "Colorimetru tricromatic cu sinteză mixtă", coordonator științific Prof. Dr. Fiz. Ioan Mihalca
Numele și tipul instituției de învățământ	Univ. "Politehnica" din Timișoara, România, Facultatea de Mecanică
Nivelul în clasificarea națională sau internațională	Nivel superior, calificativul summa cum laude (valedictorian)
Premii	șef de promoție (din aprox. 140 studenți) Olimpiadele studențești Traian Lalescu: 1989 (anul 3) National: premiul special - Mecanica fluidelor ; local: premiul 1 - Mecanica fluidelor, premiul 1 - Electrotehnică; 1988 (anul 2) National: premiul 1 – Fizică (electromagnetism, optică, mecanică cuantică) ; premiul special - Matematică ; local: premiul 1 - Matematică, premiul 1 - Fizică; 1987 (anul 1) National: premiul 3 – Fizică (mecanică & termodinamică) ; local (Centrul Universitar Timișoara): premiul 1 - Fizică, mențiune - Engleză; Premiul special comunicări științifice studențești - Matematică;

Perioada
Calificarea / diploma obținută
Numele și tipul instituției de învățământ
Premii

1981 - 1985

Diploma de Bacalaureat, **medie bacalaureat 9,66 (prima medie pe liceu)**

Liceul de Matematică-Fizică "Ioan Slavici" Arad, România
(în prezent Colegiul Național „Moise Nicoară” Arad)

Premiul 2 Olimpiada de Fizică, jud. Arad, 1982.

Aptitudini și competențe personale

Limba maternă
Limbi străine cunoscute
Autoevaluare
Nivel european (*)

Română

1994 TOEFL Exam – Lb. Engleză: Scor 627 din 640

Înțelegere		Vorbire		Scriere
Ascultare	Citire	Conversație	Discurs oral	Exprimare scrisă
C2	C2	C2	C2	C2
C2	C2	C1	C1	C1

(*) [Nivelul Cadrului European Comun de Referință Pentru Limbi Străine](#)

Management echipe de cercetare de peste 30 de persoane (de exemplu 36 de cercetători angajați în Proiectul Parteneriate 2012-2016, <http://3om-group-optomechatronics.ro/>);
 Coordonarea activității științifice instituțional - **Secretar Științific Catedră** (2004-2006) și **Facultate de Inginerie** (2008-2011); **Director Centru de Cercetare în Inginerie Mecanică și Mecatronică** (UAV Arad) – din 2013;
 Coordonarea activității studenților la cercurile științifice și la proiectele de diplomă. Mentorat.

Prelegeri invitate la Universități internaționale și Simpozioane științifice (selecție):

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, *10th 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, *4th 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, Denmark, April 23-25, **2024** (Invited Lecture, on-line);

Theory, simulations and experiments of laser scanning with rotational Risley prisms, *3rd 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, *9th 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, *9th Int. Conf. on Lasers in Medicine & 3rd 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, *8th Int. Conf. on Antennas and Electromagnetic Systems (AES)*, Marrakesh (Morocco), May 24-27, **2022** (Invited Paper); 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, *2nd Int. Advanced Conf. on Condensed Matter & Low Temp. Physics (CMLTP - Speakers)* [ISI], Kharkiv (Ukraine), June 6-12, **2021** (Plenary Lecture);

Optical Coherence Tomography Investigations in Dental Medicine, Applied Optics Group, Univ. of Kent, Canterbury (UK), Feb. 26, **2020** (Invited Seminar);

Biomedical Imaging using Optical Coherence Tomography (OCT). An Insight into Technology, Devices, and Applications, *The 6th Euro-China Conference on Intelligent Data Analysis and Applications*, <https://www.ecc2019.ro/invited-speaker/>, Arad (Romania), Oct. 15-18, **2019**;

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. 23-27, **2019**;

Optical Choppers: Classical, Eclipse, and with Rotational Shafts, *6th Advanced Electromagnetics Symposium (AES)*, <https://AES19/invited>, Lisbon (Portugal), July 24-26, **2019**;

Devices and Systems for Biomedical and Industrial Applications of Optical Coherence Tomography (OCT), *Universidad de Guadalajara* (México), Nov. 28, **2018** (Magistral Conference);

2 SPIE Invited Lectures: 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/>) (México), Nov. 29-30, **2018**;

2 Tutorials and Workshops (3h each): 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**;

Applications of Optical Coherence Tomography in non-destructive testing, *Biommedd 2018*, Cluj-Napoca (Romania), Sept. 27-29, **2018**;

2D scanning systems, patterns, and handheld probes for biomedical imaging, *2nd Int. Congress on Lasers in Dentistry* (<http://lasercongress-srls.com/>), Mamaia, Sept. 5-7, **2018** (Plenary);

Scanning patterns in imaging, at the School of Physical Sciences (Applied Optics Group), *Univ. of Kent, Canterbury* (UK), Aug. 10, **2018**;

Scanning systems: from industrial to high-end biomedical applications using optical coherence tomography, *IX Int'l Conference for Professionals & Young Scientists "Low Temperature Physics" ICPYS-LTP-2018*, Kharkiv (Ukraine), June 4-8, **2018** (SPIE Invited Lecture);

Laser scanners for high-end biomedical imaging, *City Univ. of New York, NY* (USA), Oct. 13, **2017** (Invited Seminar – Dept. of Mechanical Engineering);

Biomedical imaging with Optical Coherence Tomography. Systems and applications, *2nd Int. Seminar on Biomaterials and Regenerative Medicine (BioRemed)*, Timisoara (Romania), Oct. 5, **2017**;

Theoretical and experimental approaches on galvanometer scanners for high-end biomedical imaging applications, *5th Adv. Electromagnetics Symp.*, Incheon (South Korea), July 27, **2017**;

Laser scanning optimization for high-end applications in biomedical imaging, *SPIE-SRLS 7th International Conference on Lasers in Medicine* [ISI], Timisoara (Romania), July 14, **2017**;

Laser scanners with oscillatory mirrors for high-end applications, *TIM Physics Conference* [ISI], Timisoara (Romania), May 25-27, **2017** (Keynote Lecture);

Optical Coherence Tomography in Metallic Materials Characterization, *RoMAT2016*, Bucharest (Romania), Nov. 10-12, **2016**;

Optical Coherence Tomography: Handheld scanning probes with galvanometer scanners, *TIM 15-16 Physics Conference*, Timisoara (Romania), May 26-28, **2016**;

Optimization of biomedical systems for OCT with applications in Dental Medicine, *21th Congress of Dental Medicine – Banat Dentistry Days*, Timisoara (Romania), May 21, **2016**;

Handheld scanning probes for OCT: Developments, applications and perspectives, *World Federation of Lasers in Dentistry – European Division (WFLD-ED) 5th Congress & SRLS-SPIE 6th Int. Conf. Lasers in Medicine* [ISI], Timisoara (Romania), May 8, **2015**, published in *Proc. SPIE*;

Scanning systems: from industrial to high-end biomedical applications (SPIE Invited Lecture – at *Optics & Photonics Applications (OPA) Conference*), *Univ. of Guanajuato*, Salamanca (Mexico), Sept. 2, **2015**; http://spie.org/StudentChapterReports/Guanajuato_Report_201509.pdf

Biomedical imaging using Optical Coherence Tomography. Devices, systems, and applications (Invited Lecture), *BioRemed*, Oradea (Romania), Sept. 19, **2015**; <http://bioremed2015.srb.ro/7/programme>

Handheld Probes and Galvoscaning in OCT. On-going Industrial and Biomedical Applications (Invited Seminar), School of Physical Sciences (AOG), *Univ. of Kent, Canterbury* (UK), Feb. 20, **2015**;

Biomedical Imaging and Optical Coherence Tomography: Scanning Systems and Applications (Invited Presentation), *Academic Days of the Victor Babes Univ. of Medicine and Pharmacy of Timisoara* (Romania), Dec. 12, **2014**;

Scanning in Optical Coherence Tomography (Invited Lecture), *National Univ. of Ireland (NUI) at Galway* (Ireland), Nov. 24, **2014**; http://tomi.nuigalway.ie/SPIE_NUIG_UL/spie_events.html

Renewable Energies – Two Projects and a Global Perspective (Invited Presentation), BHB–Sustainable development business center HURO/1101/175/2.1.1, *Romania-Hungary 2007-2013 Program of Trans-frontiers Cooperation* (www.huro-cbc.eu), Arad (Romania), Apr. 11, **2014**

1D and 2D Scanning Systems in Biomedical Imaging (Invited Seminar), at the School of Physical Sciences (Applied Optics Group), *Univ. of Kent, Canterbury* (UK), Nov. 7, **2013**;

Scanning in biomedical imaging: from classical devices to handheld heads and micro-systems, *SRLS-SPIE 5th Intl Conference Lasers in Medicine* [ISI], Timisoara (Romania), Sept. 19-21, **2013**, [doi](https://doi.org/10.1117/12.222222)

Galvanometer-based Scanners in Optical Coherence Tomography (OCT) (Invited Seminar), *City Univ. of New York* (USA), Febr. 14, **2013**;

Optical Engineering: Scanners, Choppers, Lenses, and Much More. A Mathematical Approach (3 Invited Lectures, Fulbright OLP), *Ana G. Mendez University System (AGMUS): Univ. Metropolitana, Univ. del Este, and Univ. Turabo*, San Juan (Puerto Rico, USA), March 19-22, **2010**;

Optical Scanners in Medical Imaging. An Optomechanical Perspective (Invited Seminar, Fulbright OLP - Occasional Lecturer Program), *City University of New York* (USA), April 15, **2010**;

Optical scanners (Invited Lecture - for PhD Students), *The Institute of Optics, University of Rochester* (NY, USA), Mar. 03, **2010**;

Invited Presentations (Tutorials), *Hopkins Center for Optical Metrology, Institute of Optics, University of Rochester*, Rochester (NY, USA): 1) Applications and types of scanners (Nov. 03, **2009**); 2) Scanners – fundamentals (Nov. 17, **2009**); 3) Constructive characteristics of scanners (Dec. 01, **2009**); 4) Perspectives of optical scanning in OCT (Jan. 20, **2010**);

Mathematical functions of a 2-D scanner with oscillating elements, *9th Conf. on Dynamic Systems Theory and Applications*, Łódź (Poland), Dec. 18, **2007** (Invited); doi.org/10.1007/978-1-4020-8778-3_22;

Contributions on the Design of the Optical Systems (Laser Scanning Devices) (Invited Presentation), Dept. of Physics, *Jacobs University of Bremen*, Bremen (Germany), Oct. **2004**;

Competențe și aptitudini organizatorice	<p>Șef și fondator 3OM Research Group (in Opto-Mechatronics, Opto-Mechanics, and Optical Metrology), http://3om-group-optomechatronics.ro/ - și al Laboratorului de Opto-Mecatronică și Fonică Biomedicală la <i>Aurel Vlaicu Univ. of Arad</i> – din 2008.</p> <p>Director, <i>Centrul de Cercetare în Inginerie Mecanică și Mecatronică</i>, UAVA – din 2013.</p> <p>Secretar științific Facultatea de Inginerie (2008-2011), Secretar științific catedră (2004-2006).</p> <p>Organizator al Secțiunii de Inginerie a Simpozionului „Research and Education in the Innovation Era,” Arad; 2008, 2010 - editor al cărții de Proceedings.</p> <p>Organizator al Sesiunilor anuale de comunicări științifice studențești Inginerie UAVA (2008, 2009, 2011).</p> <p>Șef al Laboratorului de Mecanisme la <i>Aurel Vlaicu Univ. of Arad</i> (UAVA) – din 1999.</p>
Competențe și aptitudini tehnice	Managementul proiectelor de cercetare științifică; Membru și Director în peste 16 granturi de cercetare câștigate prin competiție. Director Proiecte IDEI, PARTENERIATE, FULBRIGHT, PED, BG, responsabil partener proiect PTE; elaborare brevete.
Competențe și aptitudini de utilizare a calculatorului	Utilizator calculator și internet; Competențe de modelare și simulare în programe specializate.
Rezultate obținute în cercetarea științifică	<p>https://www.webofscience.com/wos/author/record/B-3031-2010</p> <p>https://www.scopus.com/authid/detail.uri?authorId=9839230700 (h-index=26, Scopus)</p> <p>https://orcid.org/0000-0001-5558-4777</p> <p>https://scholar.google.com/citations?user=gBRLfcAAAAJ&hl=en&oi=ao (h-index=27, GS)</p> <p>https://www.brainmap.ro/virgil-florin-duma</p>
Publicații	<p>321 lucrări științifice publicate sau/și prezentate (66 ca unic autor, 59 ca prim, 196 ca și co-autor):</p> <p>68 în reviste ISI cu factor de impact; 53 în alte reviste cu peer-review;</p> <p>133 în proceedings indexate ISI; 67 în proceedings-urile altor conferințe.</p> <p>2 brevete naționale și o cerere de brevet – OSIM</p> <p>https://www.researchgate.net/profile/Virgil-Florin-Duma</p> <p>> 45 Prezentări invitate la conferințe sau universități internaționale;</p> <p>> 100 prezentări orale și poster la conferințe (fără proceedings, cu rezumate publicate).</p>
Cărți	<p>2 monografii științifice (unic author); 2 cursuri universitare (co-autor);</p> <p>9 cărți ca editor (2 îndrumare de laborator, 5 ISI Proc., 2 Proc.); 3 îndrumare de laborator (co-autor);</p>
Citări în reviste ISI (selecție)	<p><i>Chem. Rev.</i> (IF>50), <i>Optica</i> (IF>10), <i>IEEE-ASME Transactions on Mechatronics Scientific</i> (IF>6), <i>Reports – Nature Group</i> (IF>5), <i>Lasers in Surgery and Medicine</i> (IF>5), <i>Control Engineering Practice</i> (IF>5), <i>IEEE Transactions on Biomedical Engineering</i> (IF>4.5), <i>Neurophotonics</i> (IF>4.5), <i>IEEE Transactions on Biomedical Circuits and Systems</i> (IF>4), <i>Pharmaceuticals</i> (IF>4), <i>Sensors and Actuators A: Physical</i> (IF>4), <i>Precision Engineering</i> (IF>3.5), <i>Optics and Lasers in Engineering</i> (IF>3.5), <i>Optics Express</i> (IF>3), <i>Biomedical Optics Express</i> (IF>3), <i>Physics in Medicine and Biology</i> (IF>3), <i>Materials</i> (IF>3), <i>Mechatronics</i> (IF>3), <i>Sensors</i> (IF>3), <i>IEEE Access</i> (IF>3), <i>Int. J. of Structural Stability and Dynamics</i> (IF>3), <i>Metals and Materials International</i> (IF>3), <i>J. of Clinical Medicine</i> (IF>3), <i>Chin. Opt. Letters</i> (IF>3), <i>J. Biomed. Opt.</i> (IF>2.5), <i>Eye</i> (IF>2.5), <i>Electronics</i> (IF>1.5), <i>J. Imaging</i> (IF>2.5), <i>Measurement Science and Technology</i> (IF>2.5), <i>IEEE Sensors</i> (IF>2.5), <i>Journal J. of Optics</i> (IF>2), <i>Opt. Communications</i> (IF>2), <i>J. Biophotonics</i> (IF>2), <i>J. of Adhesion Science and Technology</i> (IF>2), <i>IEEE Photonics J.</i> (IF>2), <i>Romanian Reports in Physics</i> (IF>2), <i>Applied Science</i> (IF>2), <i>Photonics</i> (IF>2), <i>Applied Optics</i> (IF>1.5), <i>JLA</i> (IF>1.5), <i>Optics & Laser Technology</i> (IF>1.5), <i>J. Opt. Soc. Am. A</i> (IF>1.5), <i>J. of Microscopy</i> (IF>1.5), <i>Algorithms</i> (IF>1.5), <i>J. Multimedia Tools and Applications</i> (IF>1), <i>J. Micro/Nanolith. MEMS MOEMS</i> (IF>1), <i>Laser Physics Letters</i> (IF>1), <i>Opt. Eng.</i> (IF>1), <i>IEEE Trans. on Plasma Science</i> (IF>1), <i>Biomedical Physics & Engineering Express</i> (IF>1), etc.</p>
Citări în alte reviste, conferințe, etc	<i>Chinese J. of Optics and Applied Optics</i> , <i>Brazilian Journal of Instrumentation and Control</i> , <i>Proceedings of SPIE</i> , <i>Proceedings of IEEE</i> , <i>dizertatii de Master si teze de doctorat</i> , etc. - v. Google Academic
Indicatori bibliometrici personali	<p>Indicele Hirsch 25, suma citărilor în ISI Web of Science (fără autocitări): > 680;</p> <p>https://www.webofscience.com/wos/author/record/B-3031-2010 (h-index=25, ISI WoS)</p> <p>https://www.scopus.com/authid/detail.uri?authorId=9839230700 (h-index=26, Scopus)</p> <p>https://scholar.google.com/citations?user=gBRLfcAAAAJ&hl=en&oi=ao (h-index=27, GS)</p>

Membru în colectivul de redacție al unei reviste științifice	<p>2024-2025, Guest Editor of a Special Issue (SI) of <i>J. of Clinical Medicine</i> (eISSN 2077-0383), IF 3/2023, Q1, Interdisciplinary Approach on the Oral Cavity Management Due to Musculoskeletal Conditions;</p> <p>2023-Present, Guest Editor of a SI of <i>Optical and Quantum Electronics</i> (eISSN 1572-817X) IF 3, Q2: "Optical Physics in Advanced Optical Imaging for Healthcare 4.0 (springer.com)"</p> <p>2023-2024, Guest Editor of a SI of <i>Sensors</i> (ISSN 1424-8220), IF 3.4/2023, Q2, Laser Scanning and Applications;</p> <p>2021-Present, Editorial Board Member (https://www.mdpi.com/materials/editorialboard) of <i>Materials</i> (ISSN 1996-1944), IF 3.1/2023, Q1;</p> <p>2021-Present, Editorial Board Member (https://www.mdpi.com/photonics/editorialboard) of <i>Photonics</i> (ISSN 2304-6732), IF 2.1/2023, Q2; 2020, Section Board Member of <i>Optoelectronics and Optical Materials</i>;</p> <p>2021-Present, Topical Advisory Panel Member of <i>Sensors</i> (ISSN 1424-8220), IF 3.9, Q2;</p> <p>2021, Editorial Board Member of <i>Frontiers in Bioscience-Landmark</i> (imrpress.com) (ISSN 1093-4715), IF 3.1, Q2, https://www.fbscience.com/Landmark/editorial-board;</p> <p>2020-Present, Guest Editor of a Topical Collection of <i>Medicina-Lithuania</i> (ISSN 1648-9144), IF 2.4/2023, Q1, New Concepts for Dental Treatments and Evaluations;</p> <p>2020-2024, Guest Editor of SIs of <i>Applied Sciences</i> (ISSN 2076-3417), IF 2.5/2023, Q1, Recent Advances in Optomechatronics; Progress in 3OM: Opto-Mechatronics, Opto-Mechanics, and Optical Metrology;</p> <p>2020-Present, Guest Editor of SIs of <i>Photonics</i> (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</p> <p>2019-Present, Guest Editor of a Topical Collection of <i>Materials</i> (ISSN 1996-1944), IF 3.1/2023, Q1: Materials Investigations in Mechanical Systems;</p> <p>2019-Present, Guest Editor of SIs of <i>Materials</i> (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;</p> <p>2016-Present, Editorial Board Member of <i>J of Adhesion Sci and Technology</i> (Taylor & Francis), IF 2.3, Q3;</p>
Conducere societăți științifice internaționale/naționale	<p>Vice-președinte și reprezentant al UAV Arad în EUROP-RO, filială a European Robotics Platform EUROP – din 2006;</p> <p>Presedinte filiala Arad a SRR (Romanian Robotics Society), 2013-2016;</p>
Membru în societăți științifice internaționale/naționale	<p>Senior Member SPIE (International Society for Optical Engineering, USA) – din 2011, membru din 2005; 2014-Present, SPIE Visiting Lecturer (https://spie.org/);</p> <p>Life Member, Fulbright Association, USA – din 2012;</p> <p>OSA (Optical Society of America, USA) – din 2007 – Life Member din 2014; 2019-Present, OPTICA Visiting Lecturer (Optical Society of America, USA, https://www.optica.org/);</p> <p>European Technology Platform Photonics21 – din 2006.</p>

Referent științific la reviste ISI / internaționale / naționale	<p>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), OSA Continuum, Optica (IF>9), din 2007;</p> <p>SpringerNature: Acta Mechanica Sinica (IF≈0.7), din 2010; Differential Eqs. and Dynamic Systems, din 2012; J. of Zhejiang University SCIENCE A (IF≈0.5), din 2012; Meccanica (IF>2), din 2020; Scientific Reports (IF>4), din 2020;</p> <p>Elsevier: Optics Communications (IF≈1.5), din 2015; Mechatronics (IF≈1.8), din 2015; Control Eng. Practice (IF>3), din 2015; Applied Mathematical Modelling (IF>2), din 2016; Diabetes Research and Clinical Practice (IF>3.5), din 2018; Optik (IF≈2); Optical Fiber Technology (IF≈2), din 2019; Precision Engineering (IF>2.5); Saudi Dental Journal, din 2020;</p> <p>Wiley: Lasers in Surgery & Medicine (IF>2.5), din 2015;</p> <p>IEEE: IEEE Access (IF>3), din 2017; IEEE Transactions on Industrial Electronics (IF>7), din 2015; IEEE/ASME Transactions on Mechatronics (IF≈3.5), din 2015;</p> <p>ASME: J. of Medical Devices (IF>0.5), din 2015;</p> <p>IOP (UK): J. of Optics (IF>2), din 2015; Measurement Science and Technology (IF>1.4), din 2015; J. of Physics D: Applied Physics (IF>3), din 2018; Biomed. Phys. & Eng. Express (IF>1), din 2020;</p> <p>SPIE: Optical Engineering (IF>1), din 2019;</p> <p>AIP: Theoretical & Applied Mechanics Letters, din 2012;</p> <p>SAGE: J. of Engineering in Medicine (IF>1), din 2014;</p> <p>Taylor & Francis: J. of Adhesion Sc. and Tech. (IF>1), din 2015; Phase Transitions (IF≈1), din 2015;</p> <p>MDPI: Applied Sciences (IF>2), din 2016; Sensors (IF>3), Materials (IF>3), din 2017; Remote Sensing (IF>4), Mathematics (IF>1), Photonics (IF>2.5), din 2018; Int. J. of Molecular Sciences (IF>4), din 2019; J. of Clinical Medicine (IF>3.5), din 2020; Pharmaceuticals (IF>5), din 2021; Biomedicines (IF>4), din 2023; Bioengineering (IF>5), din 2023;</p> <p>AME: Quantitative Imaging in Medicine and Surgery (IF>3), din 2019;</p> <p>Romanian Academy: Romanian Reports in Physics (IF>2), since 2018;</p> <p>Latin American Journal of Solids and Structures (IF>1), din 2012;</p> <p>Hindawi: Advances in Optical Technologies, din 2011; J. of Ophthalmology (IF>1.7), din 2018; J. of Visualized Experiments (JOVE), (IF>1.5), din 2016;</p> <p>Optica Applicata (IF>0.5), din 2016;</p> <p>L&P, Discontinuity, Nonlinearity, and Complexity, din 2016;</p>
Evaluator Proiecte de cercetare științifice	<p>Din 2017: Reviewer - Grants of the Czech Science Foundation; 1 Propunere evaluată;</p> <p>Din 2013: Reviewer - Grants of the Foundation for Polish Science; 4 Propuneri evaluate;</p> <p>Din 2010: Reviewer - Fulbright Grants of the US Department of State; 10 Propuneri evaluate;</p> <p>Din 2008: Reviewer - Grants with European Union Funding (POS); Propuneri evaluate: 16 (2009); 6 (2010); 9 (2011), 8 (2012), 5 (2013); 5 (2015); 3 (2016);</p> <p>Din 2007: Reviewer - Grants of the Romanian R&D Plan; Propuneri evaluate: 30 (2007), 13 (2008), 4 (2010), 8 (2011), 3 (2014), 1 (2014), 15 (2015), 1 (2017);</p>
Organizare conferințe științifice	<p>General Chair, Member of the Scientific & Organizing Committee – Int. Conf. Advances in 3OM: Opto-Mechanics, Opto-Mechatronics, and Optical Metrology, SPIE-Affiliated [ISI], Timisoara (Romania), 2021, 2023;</p> <p>Chair, Editor-SPIE Proc. [ISI], Member-Scientific & Organizing Committee, reviewer, and Chairman of Session - SRLS 7th Intl. Conf. Lasers in Medicine (ICLM), Timisoara (Romania) 2017;</p> <p>Member of the Scientific Committee and reviewer, 2nd Intl Seminar on Biomaterials and Regenerative Medicine (BioReMed), Timisoara (Romania) 2017;</p> <p>Chair, Editor - SPIE Proceedings [ISI], Member - Scientific Committee, Organizing Committee, reviewer, and Chairman of Session - SPIE 5th Congress of the World Federation of Lasers in Dentistry-European Division (WFLD-ED) & 6th SRLS Intl. Conference Lasers in Medicine (ICLM) (http://wfld-bucharest2015.wix.com/romania), Bucharest (Romania) 2015;</p> <p>Chair, Editor - SPIE Proceedings [ISI], Member - Scientific Committee, Organizing Committee, Chairman of Session-SRLS 5th Int. Conference Lasers in Medicine (ICLM), Timisoara (Romania) 2013;</p> <p>Chairman of Session "Applications in high-tech products," 11th IFToMM Intl Symposium on the Theory of Machines and Mechanisms – SYROM (http://arotmm.ro/syrom2013/), Brasov (Romania) 2013 [ISI];</p> <p>Chairman 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;</p> <p>Member of the Scientific Committee, Chairman of Session, and reviewer, Intl. Conf. on Dynamic Systems Theory and Applications (DSTA), Lodz (Poland), 2007-2019 (http://www.dys-ta.com/); la doi ani;</p> <p>Chairman of Session: Optics in Precision Mechanics and Mechatronics, 8th Intl. Conference on Mechatronics and Fine Mechanics (COMEFIG), Cluj-Napoca (Romania), June 8-10, 2006;</p> <p>Member, Organizing Committees & reviewer of the Proc. of ISREIE (Aurel Vlaicu Univ.), Arad (Romania), 2000, 2002, 2004, 2006, 2008, 2010; Editor of the Engineering Proceedings, 2008, 2010.</p>

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- B10. **Duma V.-F.** (Ed.), *Proceedings of the 3rd International Symposium: Research and Education in an Innovation Era, Engineering Sciences*, ISSN 20652569, Arad, Nov. 10-12, **2010**;
- B9. **Duma V.-F.** (Ed.), *Proceedings of the 2nd International Symposium: Research and Education in an Innovation Era, Engineering Sciences*, ISSN 20652569, Arad, Nov. 20-22, **2008**, 502 pages;
- B8. **Duma V.-F.** (Ed.), *Tools, Devices, and Control Apparatuses. Experimental Topics* (in Romanian), Aurel Vlaicu Univ. Publishing House, ISBN 978-973-752-283-2, Arad, **2008**, 194 pages;
- B7. Perju D., Ianosi E., Mateas M., **Duma V.-F.**, *Measuring Apparatuses and Systems. Experimental Works* (in Romanian), Politehnica, ISBN 973-625-194-2, Timisoara, **2005**, 267 pages.
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- B4. Perju D., Davidescu A., Mateas M., **Duma V.-F.**, *Measurement and Control Apparatuses. Metrology* (in Romanian), University Horizons, ISBN 973-8109-60-4, Timisoara, **2001**, 106 pages;
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- 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); <https://doi.org/10.3390/app11167224>; **IF 2.838; Q2**
- R.-A. Erdelyi, **V.-F. Duma***, C. Sinescu, G. Dobre, A. Bradu, A. Podoleanu, Optimization of X-ray Investigations in Dentistry using Optical Coherence Tomography, *Sensors* **21**(13), 4554 (2021); ISSN 1424-8220; <https://doi.org/10.3390/s21134554>; **IF 3.874; Q2**
- M.M.C. Fabricky, A.-G. Gabor, R.A. Milutinovici, C.G. Watz*, Ș. Avram, G. Drăghici, C.V. Mihali, E.-A. Moacă, C.A. Dehelean, A. Galuscan, R. Buzatu, **V.-F. Duma***, M.L. Negrutiu, C. Sinescu, Scaffold-Type Structure Dental Ceramics with Different Compositions Evaluated through Physicochemical Characteristics and Biosecurity Profiles, *Materials* **14**(9), 2266 (2021); <https://doi.org/10.3390/ma14092266>; **IF 3.748; Q1**
- R.-A. Erdelyi, **V.-F. Duma***, C. Sinescu, G. Dobre, A. Bradu, A. Podoleanu, Dental Diagnosis and Treatment Assessments: Between X-rays Radiography and Optical Coherence Tomography, *Materials* **13**(21), 4825 (2020); <https://doi.org/10.3390/ma13214825>; **IF 3.623; Q2**

C. Zaharia, **V.-F. Duma***, C. Sinescu*, V. Socoliuc, I. Craciunescu, R.P. Turcu, C.N. Marin, A. Tudor, M. Rominu, M.-L. Negrutiu, Dental adhesive interfaces reinforced with magnetic nanoparticles: Evaluation and modeling with micro-CT versus optical microscopy, *Materials* **13**(9), 3908 (2020); <https://doi.org/10.3390/ma13183908>; **IF 3.623**; **Q2**

R. E. Luca, A. Giuliani*, A. Mănescu, et al, **V.-F. Duma**, C.D. Todea, Osteogenic Potential of Bovine Bone Graft in Combination with Laser Photobiomodulation: An Ex Vivo Demonstrative Study in Wistar Rats by Cross-Linked Studies Based on Synchrotron Microtomography and Histology, *Int. J. of Molecular Sciences* **21**(3), 778 (2020); <https://doi.org/10.3390/ijms21030778>; **IF 5.923**; **Q2**

V.-F. Duma*, C. Sinescu*, A. Bradu, A. Podoleanu, Optical Coherence Tomography Investigations and Modeling of the Sintering of Ceramic Crowns, *Materials* **12**(6), 947 (2019); <https://doi.org/10.3390/ma12060947>; **IF 3.059**; **Q2**

V.-F. Duma, Laser scanners with oscillatory elements: Design and optimization of 1D and 2D scanning functions, *Applied Math. Modelling* **67**(3), 456-476 (2019); <https://doi.org/10.1016/j.apm.2018.11.001>; **IF 3.633**; **Q1**

R. Luca, C.D. Todea*, **V.-F. Duma***, A. Bradu, A. Podoleanu, Quantitative assessment of rat bone regeneration using complex master-slave optical coherence tomography, *Quantitative Imaging in Med. and Surgery* **9**(5), 782-798 (2019); <http://dx.doi.org/10.21037/qims.2019.05.03>; **IF 3.226**; **Q2**

Gh. Hutiu, **V.-F. Duma***, D. Demian, A. Bradu, A. Podoleanu, Assessment of ductile, brittle, and fatigue fractures of metals using optical coherence tomography, *Metals* **8**(2), 117 (2018); doi: [10.3390/met8020117](https://doi.org/10.3390/met8020117); **IF 2.259**; **Q2**

V.-F. Duma*, A. Schitea, Laser scanners with rotational Risley prisms: Exact scan patterns, *Proceedings of the Romanian Academy, Series A* **19**(1), 53-60 (2018); [link](#); **IF 1.402**; **Q2**

Beiu R.-M.*, Beiu V., **Duma V.-F.***, Fiber optic mechanical deformation sensors employing perpendicular photonic crystals, *Optics Express* **25**(19), 23388-23398 (2017); **IF 3.356**; <https://doi.org/10.1364/OE.25.023388>; **Q1**

Mnerie C.*, Preitl S., **Duma V.-F.***, Galvanometer-based scanners: Mathematical model and alternative control structures for improved dynamics and immunity to disturbances, *International J. of Structural Stability and Dynamics* **17**(5), 1740006 (2017); **IF 2.082**; doi: [10.1142/S0219455417400065](https://doi.org/10.1142/S0219455417400065); **Q2**

Duma V.-F., Polygonal mirror laser scanning heads: Characteristic functions, *Proc. of the Romanian Acad. Series A* **18**(1), 25-33 (2017); **IF 1.752**; [link](#); **Q2**

Cogliati A., Canavesi C.*, Hayes A., Tankam P., **Duma V.-F.**, Santhanam A., Thompson K.P., Rolland J.P., MEMS-based handheld scanning probe with pre-shaped input signals for distortion-free images in Gabor-Domain Optical Coherence Microscopy, *Optics Express* **24**(12), 13365-13374 (2016); **IF 3.307**; <http://dx.doi.org/10.1364/OE.24.013365>; **Q1**

Duma V.-F.*, Dobre G., Demian D., Cernat R., Sinescu C., Topala F. I., Negrutiu M.L., Hutiu Gh., Bradu A., Podoleanu A., Handheld scanning probes for optical coherence tomography, *Romanian Rep. in Physics* **67**(4), 1346-1358 (2015); **IF 1.367**; http://www.rp.infim.ro/2015_67_4/A14.pdf; **Q2**

Duma V.-F.*, Tankam P., Huang J., Won J.J., and Rolland J.P., Optimization of galvanometer scanning for Optical Coherence Tomography, *Applied Optics* **54**(17), 5495-5507 (2015), **IF 1.598**; <http://dx.doi.org/10.1364/AO.54.005495> (2015); **Q2**

Hutiu Gh., **Duma V. F.***, Demian D., Bradu A., Podoleanu A. Gh., Surface imaging of metallic material fractures using optical coherence tomography, *Applied Optics* **53**(26), 5912-5916 (2014), **IF 1.784**; <http://dx.doi.org/10.1364/AO.53.005912>; **Q2**

Duma V.-F.*, Lee K.-S., Meemon P., and Rolland J. P., Experimental investigations of the scanning functions of galvanometer-based scanners with applications in OCT, *Applied Optics* **50**(29), 5735-5749 (2011), <http://dx.doi.org/10.1364/AO.50.005735>, **IF 1.748**; **Q2**

Duma V.-F., Optical choppers with circular-shaped windows: Modulation functions, *Communications in Nonlinear Science and Numerical Simulation* **16**(5), 2218-2224 (2011); <http://dx.doi.org/10.1016/j.cnsns.2010.04.043>; **IF 2.806**; **Q1**

Duma V.-F., Radiometric versus geometric, linear and non-linear vignetting coefficient, *Applied Optics* **48**(32), 6355-6364 (2009); <http://dx.doi.org/10.1364/AO.48.006355>; **IF 1.41**; **Q2**

Duma V.-F.* and Nicolov M., Neutral density filters with Risley prisms: analysis and design, *Applied Optics* **48**(14), 2678-2685 (2009); <http://dx.doi.org/doi:10.1364/AO.48.002678>, **IF 1.41**; **Q2**

Duma V.-F., Theoretical approach on optical choppers for top-hat light beam distributions, *J. of Opt. A: Pure and Appl. Opt.* **10**(6), 064008 (2008); <http://iopscience.iop.org/article/10.1088/1464-4258/10/6/064008>; **IF 1.742**; **Q2**

1. **Principal Investigator (PI), Principal Investigator (PI), IDEAS Project** PN-III-P4-ID-PCE-2020-2600 (Contract 55PCE/2021), [Romanian National Authority for Scientific Research \(ANCS-UEFISCDI\)](#): *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, $\Sigma IF=50.52$** ; <http://3om-group-optomechatronics.ro/pce2600/>
2. **PI, Project for Experimental Demonstration (PED) Grant** PN-III-P2-2.1-PED-2020-4423 (Contract 418PED/2020), [ANCS-UEFISCDI](#): *Optical Coherence Tomography for Non-Destructive Testing in Industry (OCT4NDT)*, in partnership with [SC Inteliform SRL Timisoara](#) (145k€); Oct. **2020-Oct 2022**; 15 researchers. 4 Guest 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. **Principal Investigator (PI), Project for Experimental Demonstration (PED) Grant** PN-III-P2-2.1-PED-2016-1937 (Contract 44PED/2017), [Romanian National Authority for Scientific Research \(ANCS-UEFISCDI\)](#): *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](#) (133k€); Jan. **2017-July 2018**; **6 journal papers in ISI Web of Science (WoS), $\Sigma IF 17.031$** ; <http://3om-group-optomechatronics.ro/pedp1937/>
4. **PI, Bridge Grant** PN-III-P2-2.1-BG-2016-0297 (Contract 48BG/2016), [ANCS-UEFISCDI](#): *Optomechatronic choppers with rotational discs and shafts for metrological, biomedical, and laser manufacturing applications (OP-CHOP)* (102k€), Oct. **2016-Oct. 2018**; **3 journal papers in ISI WoS, $\Sigma IF 5.967$** ; <http://3om-group-optomechatronics.ro/bg297/>
5. **Responsible for Partner, Transfer to Industry (PTE) Grant** PN-III-P2-2.1-PTE-2016-0181 (Contract 24PTE/2016), [ANCS-UEFISCDI](#): *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](#) (435k€), Oct. **2016-Oct. 2018**; **8 journal papers in ISI WoS, $\Sigma IF 11.672$** ; <http://3om-group-optomechatronics.ro/ptep181/>
6. **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 (2M€), Aug. **2016 - Aug. 2020**; **1 journal paper in ISI WoS, $\Sigma IF 3.307$** (Oct. 2017);
7. **PI, PARTNERSHIP Grant** PN-II-PT-PCCA-2011-3.2-1682 (Contract 22/2012) [ANCS-UEFISCDI](#) *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€); **17 journal papers in ISI WoS, $\Sigma IF=31.633$** ; <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](#) (#1 in Optics in the USA), [Univ. of Rochester, NY](#) (USA); Host: [Prof. J. P. Rolland, ODAlab](#), Sept. **2009-June 2010** (\$26,450); **1 journal paper in ISI WoS, $IF=1.748$** ;
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](#) (USA), **2010** (support of \$6,3k);
10. **PI, IDEAS Grant** 1896/2008, [ANCS-UEFISCDI](#): *Analysis and design of some polygonal and galvanometer-based, 1D and 2D scanners*, **2009-2011** (101k€); **5 journal papers in ISI WoS, $\Sigma IF=9.931$** ;
11. **Co-PI, Erasmus Program**, RWTH Aachen (IGM) - Aurel Vlaicu Univ. of Arad, **2007-2013**;
12. **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, **2007-2010** (600k€);
13. **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€);
14. **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** (60k€);
15. **PI, 3 Research Contracts** (Romanian companies), through Aurel Vlaicu Univ., **2004-2005** (2k€);
16. **PI, Young Researchers (AT) Grant**, ANCS code 385: *Development of Some New Scanning Equipments*, **2003-2004** (3.5k€); **2 books (monographs) published in 2014** [B5, B6];

17. **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** (225k€);
18. **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 GRANTS

19. **PI, OSA Global Meeting Grant**, to organize the 1st Int. Conf. [Advances in 3OM: Opto-Mechanics, Opto-Mechatronics, and Optical Metrology](#), Timisoara (Romania), **2020** (\$3k);
20. **Co-PI, Erasmus+**, Univ. of Kent, School of Physical Sciences (UK)-Aurel Vlaicu Univ. of Arad, **2018-2021**;
21. **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**;
22. **Member, CMST COST Action CM1405**, “Molecules in Motion” (MOLIM2018), <https://www.molim2018.ethz.ch/2018/>, **2015-2018**;
23. **Member, COST Action CA17126** “Towards understanding and modelling intense electronic excitation” (TUMIEE), http://www.cost.eu/COST_Actions/ca/CA17126, **2018-2021**;
24. **Member, COST Action CM1405- Chemistry and Molecular Sc. and Technologies**, [link](#), **2016-2019**;
25. **Consultant** (Expert-Coordinator of the Mechatronics and Mechanical Eng. 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**;
26. **Consultant** (Expert in Education), **POSDRU 2/1.2/S/3** (EU Funding)-UEFISCDI Project 2684: *Quality and Leadership for Romanian High Education System (QLHE)* (www.edu2025.ro), **2009-2011**;
27. **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**;
28. **Consultant** (Expert in Robotics), **CARE** (Coordinated Action for Robotics in EU), **FP 6** Program of the European Commission (participation at CARE Consensus Meetings: Stuttgart, May 2008; Pisa, Oct. 2008, for elaboration of SRA 2008-2020 – Strategic Research Agenda for Robotics in Europe);

GRANTURI PENTRU PARTICIPARE LA CONFERINȚE

29. **PI, SPIE Lecturer Program Grant**, from SPIE (The Int’l Society for Optics & Photonics, USA) and the Univ. for lecturing at the *Universidad de Guadalajara* (Mexico), Nov. 26-30, **2018** (~\$2k);
30. **PI, Grant PN-III-P1-1.1-MCD-2018-0230**, [ANCS-UEFISCDI](#) to support the visit of Dr. G. Dobre ([Univ. of Kent](#), Canterbury, UK) to UAV Arad (~1k€), [link](#), Nov. **2018**;
31. **PI, SPIE Lecturer Program Grant**, from SPIE (The Int’l Society for Optics & Photonics, USA) for lecturing at the *9th Int’l Physics Conf. ICPYS-LTP*, Kharkov (Ukraine), June 4-8, **2018** (~1k€);
32. **PI, SPIE Grant** (The Int’l Society for Optics and Photonics, USA) to support a booth at the *SPIE Photonics Europe ‘Innovation Village’*, Strasbourg (France), Apr. 22-23, **2018**;
33. **PI**, Support from the Royal Society of Jordan, to participate at the [World Science Forum](#), as representative of Romania in the Fulbright Alumni delegation, Jordan, Nov. 7-11, **2017** (>1000€);
34. **PI, Grant PN-III-P1-1.1-MCD-2016-0077**, [ANCS-UEFISCDI](#) to support the visit of Dr. G. Dobre ([Univ. of Kent](#), Canterbury, UK) to UAV Arad (~1.3k€), [link](#), Nov. **2016**;
35. **PI**, Full support from ANCS to participate at the International Conference “Diaspora in Scientific Research and Higher Education in Romania,” Timisoara **2016**;
36. **PI**, Support from the Hungarian Acad. of Sciences, to participate at [Word Science Forum](#), as representative of Romania in the Fulbright Alumni delegation, Budapest (Hungary), Nov. **2015** (>300€);
37. **PI, SPIE Lecturer Program Grant**, from SPIE (The Int’l Society for Optics and Photonics, USA) and support from the Univ. of Guanajuato for lecturing at this university (Mexico), Sept. **2015** (~\$1.8k);
38. **PI, SPIE Lecturer Program Grant**, from SPIE for lecturing at the National Univ. of Ireland (NUI) at Galway, Nov. **2014** (600€);
39. **PI**, Support from the Brazilian Academy of Sciences and from the Fulbright Association, to participate at the [Word Science Forum](#), as representative of Romania in the Fulbright Alumni delegation, Rio de Janeiro (Brazil), Nov. **2013** (~4k€);
40. **PI**, Support from the Fulbright Academy of Science and Technology and from the Hungarian Academy of Sciences, to participate at the [Word Science Forum](#), as representative of Romania in the Fulbright Alumni 30+ delegation, Budapest (Hungary), Nov. **2011** (~1.5k€);
41. **PI, Fulbright Occasional Lecturer Program Grant** – from the US Department of State, for lecturing in New York (N.Y., USA), April **2010** (\$250);
42. **PI, Research Foundation of City Univ. of New York**, for Invited Seminar, April **2010** (\$350);

Stagii de cercetare
de scurtă durată

43. **PI, Fulbright Conference** Support – from the US Department of State, for participating at the Fulbright Conference: Linking Campus to Community, in Washington D.C. (USA), April **2010** (~\$1k);
44. **PI, Fulbright Occasional Lecturer Program** Grant – from the US Department of State, for lecturing in San Juan (Puerto Rico, USA), March **2010** (\$750);
45. **PI, Ratiu Family Charitable Foundation (UK)** Grant, for participating at the SPIE 1st Canterbury Workshop on Adaptive Optics and OCT, Sept. **2008**, Kent (UK) [ISI] (335£);
46. **PI, MC ANCS** Grant 237/2007, for participating at DSTA Conference, Lodz (Poland), [link](#) (800€);
47. **PI, MC ANCS** Grant 140/2007, for DAAAM Symposium, Zadar (Croatia) [ISI] [link](#) (800€);
48. **PI, IEEE & FEDROM** (FEDeration of ROManians in Spain) Support for participation at IEEE/LEOS ODIMAP V (2 papers), Oct. **2006**, Madrid (Spain) (total: ~900€).

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

1-2 săptămâni (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, NY (USA): Oct. 11-15, **2017**; Feb. 08-15, **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**;

Burse
(Scholarships & Fellowships)

Fulbright Senior Research Fellowship, awarded by the US Dept. of State, at *The Institute of Optics* (#1 rated in Optics and #4 in Applied Physics in the US), *Univ. of Rochester, N.Y.* (USA); Host: Prof. Jannick P. Rolland (Brian J. Thomson Chair in Optical Engineering), ODALAB (<http://www.odalab-spectrum.org/Rochester/People.html>), 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**).

PREMII

Top 2% scientists in the world "Updated science-wide author databases of standardized citation indicators", <https://doi.org/10.17632/btchxktzyw.3>;

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€);

1st 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, *24th 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-2017-15869](#) for *Proc. Rom. Acad. Series A* **18**, 25 (**2017**) [link](#) (500€);

ANCS Award [PN-III-P1-1.1-PRECISI-2017-19701](#) for *Opt. Express* **25**(19), 23388 (**2017**); [doi](#) (500€); **Top 1% reviewers** in Physics and Astronomy (2016) – on *Publons*, <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. Gh., Confocal laser scanning microscopy versus digital microscopy in the analysis of the marginal adaptation of Tizian overlays, *7th Intl 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](#) 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](#) (75€);

ANCS Award PN-II-RU-PRECISI-2015-9-8637 for *Applied Optics* **54**(17), 5495-5507 (**2015**), [link](#) (500€);

	<p>ANCS (Romanian Authority for Scientific Research) Habilitation Award 3863/2014 (1,200€);</p> <p>1st Award - Implant Poster Competition, for M.L. Negruțiu, C. Sinescu, V.-F. Duma, and A. Manescu, MicroCT Investigation of Bone Graft Biomaterials, <i>New York Great Dental Meeting</i>, USA, 2014;</p> <p>ANCS Award 6510/2014, for <i>Applied Optics</i> 53(26), 5912-5916 (2014) link (150€);</p> <p>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;</p> <p>ANCS Award 1257/2011 for <i>Applied Optics</i> 50(29), 5735-5749, 2011, link (500€);</p> <p>ANCS Award 1390/2010, for <i>Applied Optics</i> 48(32), 6355-6364, 2009, link (500€);</p> <p>ANCS Award 1391/2010, for <i>Applied Optics</i> 48(14), 2678-2685, 2009, link (250€);</p> <p>ANCS Award 87/2008, for <i>J. of Optics A: Pure and Applied Optics</i> 10(6), 064008, 2008, link (1,000€);</p> <p>Merit Salary, granted annually, on a competitive basis (15% salary bonus), by the Univ., 2004-2006;</p> <p>University, Traian Lalescu National Students' Olympics:</p> <ul style="list-style-type: none"> ➤ 1989 (3rd year) National: special award in Mechanics of Fluids; <i>local: 1st award in Mechanics of fluids, 1st award in Electrotechnics</i>; ➤ 1988 (2nd year) National: 1st award in Physics (Electromagnetism, Optics & Quantum Mech.), special award in Mathematics; <i>local: 1st award for Mathematics, 1st award in Physics</i>; ➤ 1987 (1st year) National: 3rd award in Physics (Mechanics & Thermodynamics); <i>local (Timisoara County Universities Center): 1st award in Physics, special award in English; special award for scientific communications in Mathematics</i>; <p>High School: 2nd award in Physics, Arad County, 1982.</p>
Brevete de inventie	<p>Duma V.-F., Optical or laser scanner with linkages, Romanian Patent Request A00644/18.10.2022.</p> <p>Duma V.-F., Demian D., Optical modulator, has solid rotating shaft with some through slots of well-defined profiles, Derwent No. 2014-P50842; Romanian Patent RO 129610-B1/2021; link</p> <p>Duma V.-F., Nicolov M. F, Mnerie C., Szantho L., Optical modulator with rotating element, has role to generate light pulses of certain profile, Derwent No. 2011-J76364; Romanian Patent RO 126505/2016;</p>
Dotări semnificative	<p>Am dezvoltat și dotat Laboratorul de Optomecatronică și Fotonică Biomedicală (UAVA, Sala M29), respectiv Laboratorul de Ingineria Laserilor (UAVA, Sala M329), de cercetare, cu aparatură de peste 350.000 Euro – exclusiv în cadrul proiectelor de cercetare la care am fost director.</p> <p>Am continuat (după 1999) dotarea Laboratorului de Mecanisme (didactic) – exclusiv prin lucru cu studenții.</p>
Domenii de interes științific	<p>Aparate și sisteme de măsurare; Optomecatronică și sisteme optice; Fotonică și optoelectronică biomedicală; Mecanisme și teoria mașinilor, robotică; Ingineria calității.</p>

Arad, 21.07.2024

