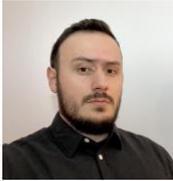


PERSONAL INFORMATION

Stelian Arjoca



 Timisoara, Romania

 arjoca.stelian@umft.ro

Sex Male | Nationality Romanian

WORK EXPERIENCE

2025 – to date

ASSOCIATE PROFESSOR

Victor Babes University of Medicine and Pharmacy, Timisoara, Romania

Department III – Biophysics Group

Teaching Biophysics lectures and laboratory classes for General and Dental Medicine students in English / Conducting scientific research.

2023 – 2025

LECTURER

Victor Babes University of Medicine and Pharmacy, Timisoara, Romania

Department III – Biophysics Group

Biophysics course for the Dental Medicine program (English section); practical sessions for General and Dental Medicine programs taught in Romanian and English / Scientific research.

2018 – 2023

ASSISTANT PROFESSOR

Victor Babes University of Medicine and Pharmacy, Timisoara, Romania

Department III – Biophysics Group

Biophysics laboratory classes for General Medicine and Dental Medicine programmes in Romanian and English / Scientific research.

RESEARCH ASSISTANT

West University of Timisoara, Timisoara, Romania

Faculty of Physics

Scientific research in the field of crystal growth / Teaching the Crystal growth methods course and laboratory works.

JUNIOR RESEARCHER

National Institute for Materials Science, Tsukuba, Japan

Optical Single Crystals Group

Scientific research in the field of inorganic single crystal growth and characterization for optoelectronic devices.

EDUCATION AND TRAINING

2016

PhD in Engineering

Waseda University, Tokyo, Japan

School of Advanced Science and Engineering, Research on single crystal growth and characterization

2012

MSc in Physics

West University of Timisoara, Timisoara, Romania

Faculty of Physics - "Physics of crystalline materials" program

2010

BSc in Physics

West University of Timisoara, Timisoara, Romania

Faculty of Physics - "Environmental Physics" program

PERSONAL SKILLS

Mother tongue

Romanian

Other languages

English (advanced), French (beginner), Japanese (beginner)

Communication skills

- good communication skills in Romanian and English, including technical writing for theses, scientific publications, and technical documentation, developed through work experience abroad;
- experienced in public speaking as a presenter at multiple national and international conferences and academic events;
- teaching experience including lecturing in Biophysics and coordinating Biophysics practical sessions for General Medicine and Dental Medicine students (both Romanian and English sections), as well as delivering the "Professional Communication" and "Crystal Growth Methods" courses for MSc students at the West University of Timisoara;
- extensive experience working in multicultural academic and research environments;
- open to participating in a wide range of sociocultural activities.

Organisational / managerial skills

- punctual, with the ability to work effectively under pressure and consistently meet deadlines;
- strong ability to self-evaluate performance and implement continuous self-improvement;
- good organisational skills developed through planning and promoting seminars and conferences;
- willing to take an active role in organising and promoting academic events.

Job-related skills

- extensive experience in designing and conducting biophysics experiments, including data acquisition, quantitative analysis, and interpretation for publication in peer-reviewed journals;
- knowledge and practical skills in 3D (bio)printing;
- expertise in materials synthesis and processing (solid-state reactions, crystal growth methods such as Czochralski, Bridgman, micro-PD, cutting and polishing, and thermal treatments) and in structural and optical characterisation (XRD, XRF, DSC, UV-Vis, FTIR, PL, lifetime, QE, cathodo- and radioluminescence);
- proficiency with specialised scientific software: CAD/CAM (Autodesk Fusion 360, Cura), crystallography (FullProf, Match!, FindIt, VESTA), numerical modelling of heat and mass transport (ANSYS, CrysVUn), spectrophotometry (SpecWin Pro), and visualization (Origin, Prism).

Computer skills

- Python programming for app development, data processing and visualization;
- proficient user of Windows, macOS and Linux operating systems and major office suites;
- regular user of AI-assisted tools for documentation and literature support (NotebookLM, Perplexity) to enhance teaching materials and research workflows;
- proficient in video editing for educational content using DaVinci Resolve and Final Cut Pro (lecture and laboratory demonstration videos).

Driving licence

Category B

ACADEMIC RESULTS

Hirsch index: 8 (Web of Science), **10** (Scopus), **11** (Google Scholar);

Author of **17 ISI-indexed publications** (11 as main author) with **over 300 citations** in Web of Science; Oral and poster presentations at **more than 40 national and international conferences**;

Member of the Center for Modeling Biological Systems and Data Analysis and of the Romanian Society for Pure and Applied Biophysics (secretary of the Timisoara branch since 2019).

Adjunct lecturer at the West University of Timisoara, Faculty of Computer Science, since 2019.

Research projects

Director of research projects won in national/institutional competitions:

1. 2020–2022 – “Development and experimental validation of 3D bioprinting software for building model tissues for cancer research”, postdoctoral grant won in UMFVBT internal competition, contract no. 1POSTDOC/1310/31.01.2020, Romania (45200 EUR)
2. 2021 – Research grant won in the Romanian Healthcare Awards 2021 competition (50000 RON)
3. 2016 – “Synthesis and characterization of fluoro-elpasolite compounds”, National Competition UEFISCDI 2016, Postdoctoral research, Romania (*awarded but not implemented*, 60000 EUR)

Member in research teams:

1. 2017 – “Physical and numerical experiments for studying the laser accelerated particles and their interaction with crystalline materials” (ELICRY2), grant no. 32-ELI/01.09.2016, Romania
2. 2014–2016 – “Development of single crystal phosphors for high-brightness LEDs”, Grant JSPS KAKENHI No. 25420308, Japan

Honours and awards

2021 – Winner, Romanian Healthcare Awards 2021, “Research Project of the Year” category.

2021 – Gold Medal, InventCor National Invention Salon 2021, Romania.

2017 – “Best Poster Presentation Award”, Laser Ignition Summer School, Romania.

2015 – “Excellent Student Presentation Award”, Materials Science Society of Japan, Tokyo, Japan.

2013, 2014, 2015 – Recipient of the **Waseda University Young Doctoral Students Scholarship**.

2012 – Recipient of the **Japan Student Services Organization Scholarship**.

List of scientific publications

Research articles published in journals indexed in WOS Core Collection:

1. R.A. Tuce, M. Neagu, V. Pupăzan, A. Neagu, **S. Arjoca**, "Full-Arch Oral Rehabilitation in All-on-4 "M" Configuration Using Surgical Guides with Internal Cooling: A Clinical Case Report" *J. Clin. Med.*, 2026, 15:1070, FI(2024): 2.9
2. M. Neagu, A. Robu, **S. Arjoca**, A. Neagu, "Cell-Based Computational Models of Organoids: A Systematic Review". *Cells*. 2026, 15:177, FI(2024): 5.2
3. R.A. Tuce, V. Pupăzan, M. Neagu, **S. Arjoca (corresponding author)**, A. Neagu, "The use of thermal imaging to assess heat generation during dental implant bed preparation in the presence of a surgical guide with an incorporated coolant channel", *Journal of Prosthodontics*, 2026, early view: <https://doi.org/10.1111/jopr.70078>, FI(2024): 5.49
4. R.A. Tuce, M. Neagu, V. Pupăzan, A. Neagu, **S. Arjoca**, "Heat Generation during Dental Implant Bed Preparation Using Surgical Guides with and without Internal Irrigation Channels Evaluated on Standardized Models of the Alveolar Bone", *Applied Sciences*, 2024, 14(17):8051, FI:2.5
5. **S. Arjoca**, F. Bojin, M. Neagu, A. Paunescu, A. Neagu, V. Paunescu, "Hydrogel Extrusion Speed Measurements for the Optimization of Bioprinting Parameters", *Gels*, 2024, 10(2):103, FI: 5
6. R.A. Tuce, M. Neagu, V. Pupăzan, A. Neagu, **S. Arjoca**, "The 3D Printing and Evaluation of Surgical Guides with an Incorporated Irrigation Channel for Dental Implant Placement", *Bioengineering*, 2023, 10(10):1168, FI:3.8
7. **S. Arjoca**, A. Robu, M. Neagu, A. Neagu, "Mathematical and computational models in spheroid-based biofabrication", *Acta Biomaterialia*, 2023, 165:125, FI:9.4
8. F. Bojin, A. Robu, M.I. Bejenariu, V. Ordodi, E. Olteanu, A. Cean, R. Popescu, M. Neagu, O. Gavriluc, A. Neagu, **S. Arjoca (corresponding author)**, V. Paunescu, "3D Bioprinting of Model Tissues That Mimic the Tumor Microenvironment", *Micromachines*, 2021, 12(5):535, FI: 3.523
9. A. Popescu, **S. Arjoca**, D. Vizman, "Numerical study of electromagnetic stirring in a cylindrical configuration for directional solidification of multi-crystalline silicon", *Romanian Journal of Physics*, 2017, 62(9-10): 608, FI: 1.433
10. **S. Arjoca**, D. Inomata, Y. Matsushita, K. Shimamura, "Growth and optical properties of $(Y_{1-x}Gd_x)_3Al_5O_{12}:Ce$ single crystal phosphors for high-brightness neutral white LEDs and LDs", *CRYSTENGCOMM*, 2016, 18(25):4799, FI: 3.474
11. **S. Arjoca**, E.G. Villora, D. Inomata, Y. Arai, Y.J. Cho, T. Sekiguchi, K. Shimamura, "High homogeneity, thermal stability and external quantum efficiency of Ce:YAG single-crystal powder phosphors for white LEDs", *Journal of the Ceramic Society of Japan*, 2016, 124(5):574, FI: 0.769
12. **S. Arjoca**, E.G. Villora, D. Inomata, K. Aoki, Y. Sugahara, K. Shimamura, "Temperature dependence of Ce:YAG single-crystal phosphors for high-brightness white LEDs/LDs", *Materials Research Express*, 2015, 2(5):055503, FI: 0.968
13. **S. Arjoca**, E.G. Villora, D. Inomata, K. Aoki, Y. Sugahara, K. Shimamura, "Ce:(Y_{1-x}Lu_x)₃Al₅O₁₂ single-crystal phosphor plates for high-brightness white LEDs/LDs with high-color rendering (Ra > 90) and temperature stability", *Materials Research Express*, 2014, 1(2):025041, FI: 0.968

Research articles published in journals indexed in international databases:

1. R.A. Tuce, **S. Arjoca**, M. Neagu, A. Neagu, "The use of 3D-printed surgical guides and models for sinus lift surgery planning and education", *Journal of 3D printing in Medicine*, 2019, 3:3;
2. C. Sabou, S. Cătană, A. Neagu, **S. Arjoca**, M. Neagu, V. Pupăzan, "Changes in body composition induced by diet and exercise", *Romanian Journal of Biophysics*, 2018, 28(2):29-43
3. E.G. Villora, **S. Arjoca**, D. Inomata, K. Aoki, K. Shimamura, "Single-Crystal Phosphors for High-Brightness White LEDs and LDs", *Journal of Japanese Association for Crystal Growth*, 2015, 42(2):119-129

Full-length articles published in conference proceedings indexed in the ISI Web of Knowledge:

1. E. G. Villora, **S. Arjoca**, D. Inomata and K. Shimamura, "Single-crystal phosphors for high brightness white LEDs/LDs", Proceeding SPIE 9768, Light-Emitting Diodes: Materials, Devices, and Applications for Solid State Lighting XX, 976805 (2016)
2. K. Shimamura, **S. Arjoca**, E.G. Villora, D. Inomata, K. Aoki, A. Funaki, T. Hatanaka, T. Kizaki, K. Naoe, "Development of Electro-Optical Single Crystals for Energy Saving", Ch.8 of Ceramic Materials for Energy Applications IV (2014)
3. E. G. Villora, **S. Arjoca**, K. Shimamura, D. Inomata, K. Aoki, "β-Ga₂O₃ and single-crystal phosphors for high-brightness white LEDs and LDs, and β-Ga₂O₃ potential for next generation of power devices", Proceeding SPIE8987, Oxide-based Materials and Devices V, 89871U (2015)
4. A. Neculae, S. Arjoca, D. Vizman, "Numerical study of heat transfer in buildings for different environmental conditions", AIP Conference Proceedings 1387 276-282 (2011)

Meeting abstracts published in journals indexed in WOS Core Collection:

1. F. Bojin, **S. Arjoca (presenter /corresponding author)**, M.I. Bejenariu, V. Ordodi, E. Olteanu, A. Cean, R. Popescu, M. Neagu, O. Gavriluc, A. Neagu, V. Paunescu, "Biofabrication of tumor models that mimic the tumor microenvironment using extrusion bioprinting", *Tissue Engineering Part A*, 2023, 29(11-12):287-288, Meeting Abstract 7329631881, WOS:001008097000089
2. **S. Arjoca**, A. Robu, A. F. Bojin, V. Ordodi, E. Olteanu, A. Cean, M. Neagu, O. Gavriluc, A. Neagu, V. Paunescu, "Post-printing structure formation in bioprinted tissue constructs that mimic the tumor microenvironment", *Tissue Engineering Part A*, 2023, 29(11-12):155-156, Meeting Abstract 5235450864, WOS:001008097000012
3. F. Bojin, A. Robu, M.I. Bejenariu, V. Ordodi, E. Olteanu, A. Cean, R. Popescu, M. Neagu, O. Gavriluc, A. Neagu, **S. Arjoca**, V. Păunescu, "3D bioprinting of model tissues that mimic the tumor microenvironment", *European Biophysics Journal with Biophysics Letters* **50** (Suppl1) 173 (2021);