

PERSONAL INFORMATION **Petrișor Traian**


WORK EXPERIENCE

2016-Present

Lecturer

Technical University of Cluj-Napoca

- **Course** - *Physics I* (1st Year, Faculty of Electronics, Telecommunications and Information Technology, Romanian Section);
- **Recitations** - *Physics I, Physics II* (1st Year, Faculty of Electronics, Telecommunications and Information Technology, Romanian and English Sections);
- **Laboratory** - *Physics* (1st Year, Faculty of Building Services Engineering, Faculty of Automation and Computer Science)

2011-2016

Teaching Assistant

Technical University of Cluj-Napoca

- **Recitations** - *Physics I, Physics II* (1st Year, Faculty of Electronics, Telecommunications and Information Technology, Romanian and English Sections); *Physics* (1st Year, Faculty of Industrial Engineering, Robotics and Production Management, Cluj-Napoca, Bistrița)
- **Laboratory** - *Physics* (1st Year, Faculty of Building Services Engineering, Faculty of Automation and Computer Science, Faculty of Industrial Engineering, Robotics and Production Management)

2008-2011

Graduate Assistant

Technical University of Cluj-Napoca

- **Recitations** - *Physics I, Physics II* (1st Year, Faculty of Electronics, Telecommunications and Information Technology, Romanian and English Sections); *Physics* (1st Year, Faculty of Industrial Engineering, Robotics and Production Management, Faculty of Civil Engineering)
- **Laboratory** - *Physics* (1st Year, Faculty of Automation and Computer Science, Faculty of Industrial Engineering, Robotics and Production Management)

2003-Present

Assistant researcher/Researcher

Technical University of Cluj-Napoca

- metallic and oxide thin film and thin film heterostructure growth;
- structural (X-ray diffraction) and morphological (atomic force microscopy) thin film characterization;
- superconducting transport properties of high temperature superconducting thin films.

EDUCATION AND TRAINING

2016-2018

Graduate Course in Statistics

University of Sheffield, Sheffield (Regatul Unit)

- Post graduate course in Statistics (Mathematics, Probabilities, Statistics)

2007-2011 **Ph. D. in Physics (joint thesis)**

"Henri Poincaré" University, Nancy (France)

Ph. D. in Materials Engineering (joint thesis)

Technical University of Cluj-Napoca (Romania)

- Thesis title: *Modulated magnetic structures for magnetic vortex pinning in high temperature superconductors*

2005-2007 **M. Sc. in Solid State Physics**

"Babeș-Bolyai" University, Cluj-Napoca (Romania)

2005-2006 **M. Sc. in Materials Physics**

"Joseph Fourier" University, Grenoble (France)

2001-2005 **B. Sc. in Physics**

"Babeș-Bolyai" University, Cluj-Napoca (Romania)

PERSONAL SKILLS

Mother tongue(s) Romanian

Foreign language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Speaking production	
English	C2	C2	C2	C2	C2
		Cambridge Certificate in Advanced English -- Grade A			
Italian	B1	B1	B1	A1	A1
French	A1	A1	A1	A1	A1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2: Proficient user
Common European Framework of Reference for Languages

Communication skills Good communication skills in both Romanian and English acquired through my teaching experience, participation in national and European research projects and participation at international conferences

Management skills Good management skills acquired by managing three research projects as a director

Job-related skills

- *Electrical measurements*: characterization of the electrical transport properties of materials: I-V characteristics, magneto-electric transport characterization of materials (R(H,T))
- *Automation of electrical measurement processes using LabVIEW*
- *Materials characterization*: Structural properties (X-ray diffraction techniques); Morphological properties of thin films (AFM, X-ray reflectometry), Magnetic properties (MFM, VSM, SQUID).
- *UV lithography and related processes*: UV lithography mask design, UV lithography of thin films.
- *Thin films and thin film heterostructure growth*: DC/RF magnetron sputtering, pulsed laser ablation, e-beam evaporation
- *3D printing*: design and manufacturing of various components for the research Infrastructure

- Digital skills
- LabVIEW, Mathematica, Origin, Autodesk Fusion 360
 - Microsoft Office™

ADDITIONAL INFORMATION

- Publications**
- Articles: 62, Web of Science, Author Identifier: C-5898-2012: number of citations: 837 (self-citations excluded), *h*-index: 16
 - Books: *Micro și nanotehnologii. Tehnici de fabricare și caracterizare a filmelor subțiri cu aplicații în microelectronică*, C. Tiușan, T. Petrișor Jr., M. Gabor UTPRES (2013); *Quantum mechanics through applications*, C. Tiușan, M. Gabor, T. Petrișor Jr. UTPRES (2013);
 - Book chapter: *Characterization of Complex Spintronic and Superconducting Structures by Atomic Force Microscopy Techniques*, L. Ciontea, M. S. Gabor, T. Petrișor Jr., T. Ristoiu, C. Tiușan, T. Petrișor in „SCANNING PROBE MICROSCOPY – PHYSICAL PROPERTY CHARACTERIZATION AT NANOSCALE”, InTech Europe, Croatia, (2012).
- Research internships/fellowships**
- 2009 (3 months) *research fellowship* ENEA, Frascati, Italy, research topic: Structural and electrical transport properties in $\text{La}_x\text{Sr}_{1-x}\text{MnO}_3/\text{YBa}_2\text{Cu}_3\text{O}_7$ bi-layers;
 - 2008 (3 months) *research fellowship* ENEA, Frascati, Italy, research topic: Magnetic properties of multilayered structures
 - 2007 (2 years) *BD fellowship* (national competition), Technical University of Cluj-Napoca, title: Spin polarized transport in ferromagnet/insulator/superconductor multilayers, CNCSIS code: 290, budget: 8989 Euros
 - 2006 (3 months) *research fellowship* CEA-SPINTEC, Grenoble, France, research topic: High frequency magnetization dynamics;
 - 2006 (3 months) *M. Sc. research internship* CEA-SPINTEC, Grenoble, France, research topic: High frequency magnetization dynamics;
 - National Institute of Materials Physics (NIMP), Bucharest (Romania), *research internship*, research topic: Magnetic properties of $\text{YBa}_2\text{Cu}_3\text{O}_7$ superconducting thin films
 - LPM – JIL laboratory, „Henri Poincaré” University, Nancy, France (*B. Sc. research internship, Ph. D. internships*, research topic: deposition and characterization of magnetic thin films) - 2005, 2007-2011.
- Specialization courses/Summer schools**
- *Life in Electric Land*, BEST Cluj-Napoca (summer school) – Coordinating professor (2019)
 - Bruker AXS, Karlsruhe, Germany: 1. High Resolution X-Ray Diffraction on Thin Films; 2. Stress and texture determination using X-ray diffraction ; 3. Rietveld refinement using TOPAS. .
 - European School of Magnetism ESM 2009, Timișoara, Romania (2009);
 - European School of Magnetism ESM 2007, Cluj-Napoca, Romania (2007);
 - UJF-INPG, Grenoble, France, Course in Nanotechnologies (2005).
- Conferences**
- European Conference on Applied Superconductivity (EUCAS): EUCAS 2013, Genova, Italy; EUCAS 2017, Geneva, Switzerland (Section chairman: 3MO_3 : Cuprate thin films); EUCAS 2019, Glasgow, Scotland;
 - Applied Superconductivity Conference, ASC, Seattle, WA (SUA), 2018
- National patent (co-author)**
- Chemical method for preparing epitaxial films of Strontium-doped Lanthanum manganite, $\text{La}_{0.66}\text{Sr}_{0.33}\text{MnO}_3$ (LSMO), autori: M. Năsui, T. Petrișor Jr., Ramona Bianca Moș, Amalia Mesaros, Mihai Sebastian Gabor, Lelia Ciontea, Traian Petrișor, OSIM code: RO131325-B1
Patent awards: gold medal (Proinvent 2019); bronze medal (Euroinvent 2019); excellence diploma (Salonul Cadet Inova 2018).
- Awards**
- *Profesor Bologna*, National Association of Romanian Student Organizations, ANOSR (2019);
- M. Sc. thesis consultant**
- *drd. eng. Cristina Ana Davidas* "Design of a high sensitivity mixed superconducting-magnetoresistive magnetic field sensor", Prof.dr. eng. Ovidiu Aurel Pop (coordinator)

Research projects (director)

- *High temperature superconducting RF coil fabrication on flexible ceramic substrates for magnetic resonance imaging applications (SupraFlex)*, project code: PN-III-P1-1.1-TE-2019-1777, contract nr. 171/2021 (2021-2023)

Financing: Romanian Ministry of Education and Research, CNCS-UEFISCDI – Research projects for young, independent research teams (TE), 2019 call

Budget: 88.209 Euros

Project results: on-going project

- *High sensitivity mixed superconducting-magnetoresistive magnetic field sensors for biomedical applications (SuperMagSense)*, <http://supermagsense.weebly.com>, project code: PN-III-P1-1.1-TE-2016-2465, contract nr. 80/2018 (2018-2020)

Financing: Romanian Ministry of Education and Research, CNCS-UEFISCDI – Research projects for young, independent research teams (TE), 2016 call

Budget: 96.701 Euros

Project results:

- 1 ISI article;
- 2 poster presentations (1 as invited poster): 14th European Conference on Applied Superconductivity, 1 - 5 September, Glasgow, (Scotland);
- *Nano-engineered Magnetic Pinning Centers in High Temperature Superconducting Epitaxial Thin Films (MagPin)*, <http://proiect-magpin.weebly.com>, project code: PN-II-P1-RU-TE-2014-4-2848, contract nr. 333/2015 (2015-2017)

Financing: Romanian Ministry of Education and Research, CNCS-UEFISCDI – Research projects for young, independent research teams (TE), 2014 call

Budget: 121.803 Euros

Project results:

- 2 ISI articles;
- 3 oral presentations: 13th European Conference on Applied Superconductivity, 17 - 21 September 2017, Geneve (Switzerland); 11th International Conference on Physics of Advanced Materials, 8 - 14 September (2016), Cluj-Napoca (Romania); Processes in Isotopes and Molecules, 27-29 September 2017, Cluj-Napoca (Romania);
- 1 poster presentation: 13th European Conference on Applied Superconductivity, 17 - 21 September 2017, Geneve (Switzerland);

Research project (member)

- European:
 - (1) *Nano-engineered REBCO Superconducting Tapes for High Fields Application*, ENR-MFE19.ENEAN-04, Eurofusion H2020 (2019-2020);
 - (2) *Unexplored magnetic vortex regimes relevant for fusion applications of superconductors*, AWP15 –ENR-01/ENEAN-08, Eurofusion H2020, (2015-2017);
 - (3) *European development of Superconducting Tapes: integrating novel materials and architectures into cost effective processes for power applications and magnets (EUROTAPES)*, PC7 (2012-2016);
 - (4) *Testing in cold condition of the commercially available HTS tapes*, Euratom- AMT-5.1-T03, PC7 (2015);
 - (5) *Measurement of the electrical resistivity and the degree of isotropy from RT to 1000°C of irradiated 2D and 3D SiC/SiCf composites*, Euratom - TW5-TTMA-001-D13, PC6 (2005).
- National:
 - (1) *Emerging sensors and data storage spintronic devices based on magnetic tunnel junctions with enhanced efficiency magnetization manipulation*, PN-III-P4-ID-PCE-2016-0143, director: Prof. dr. eng. C. Tiușan (2017-2019);
 - (2) *High temperature superconducting fault-current limitors* PN III, 88 PED (2016-2018);
 - (3) *Mesoscopic SPINtronic devices with TAILored magneto-transport properties*, PN-II-ID-PCE-2012-4-0315, director: Prof. dr. eng. C. Tiușan (2013-2016);
 - (4) *Thick YBa₂Cu₃O_{7-x} films with improved parameters for superconducting coatings*, PNII PT_PCCA-2011-3 (2012-2015);
 - (5) *Continuous modelling – from micro to macro scale – of advanced materials in virtual fabrication*, PNII-ID100 Nr.6/2010 (2010-2013);
 - (6) *Doping and dimensionality effects on magnetic, structural, morphological properties and spin dynamics of ferromagnetic oxide nano-structures*, PNI-ID106, PCCE Nr.4/2010 (2010-2013);
 - (7) *Research and Development of Mesoscopic Size Spintronic Devices*, POSCCE CTR.205/20.07.2010, director: Prof. dr. eng. C. Tiușan (2010-2013);
 - (8) *Thin film, micro and nanofabrication laboratory (LFSM)*, PNII-Capacitati Nr. 191/Cpl/09.09.2008 (2008-2010);
 - (9) *Epitaxial YBCO films with strongly correlated nano pinning centers for high temperature superconducting coated conductors*, PNII- Nanopin Nr.71-045/14.09.2007 (2007-2010);
 - (10) *Materials for Spintronics (SpinTroMat)*, CEEX Contract Nr.17-1283/2005 (2005-2008).

ANNEXES

Publications List.

Cluj-Napoca
19.06.2021

Signature.

