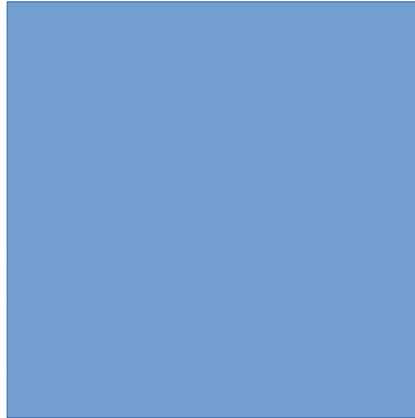




Europass Curriculum Vitae

Personal information



First name(s) / Surname(s) **Mircea Gabriel Modreanu**

E-mail(s)



Nationality Romanian

Date of birth 25/101967

Gender Male

Work experience

Dates 01-2002- present

Occupation or position held Principal Investigator

Main activities and responsibilities Principal Investigator in Micro and Nanoelectronics research

Name and address of employer Tyndall National Institute-University College Cork
Lee Maltings, Dyke Parade, Cork, T12 R5CP, Ireland

Dates 1993-2002

Occupation or position held Physicist, Senior Researcher II

Main activities and responsibilities Nanomaterial development for Micro and Nanoelectronics and Photonics

Name and address of employer National Institute for Microtechnologies- IMT
126A, Erou Iancu Nicolae Street, 077190, Voluntari, Ilfov, ROMANIA

Dates 1990 - 1992

Occupation or position held Physicist, Senior researcher III

Main activities and responsibilities Electron Microscopy in Materials Science

Name and address of employer Institute of Materials Physics and Technology
105bis, Atomistilor Street, R-077125 Magurele (Romania)

Education and training

Dates	2002
Title of qualification awarded	PhD in Solid State Physics
Name and type of organisation providing education and training	University of Bucharest –Faculty of Physics Bucharest (Romania)
Dates	1993
Title of qualification awarded	MSc in Solid State Physics
Principal subjects / occupational skills covered	Atomic and Molecular Physics
Name and type of organisation providing education and training	University of Bucharest Bucharest (Romania)
Dates	1988
Title of qualification awarded	Baccalaureate
Name and type of organisation providing education and training	Lyceum Alexandru Ioan Cuza Focsani(Romania)

Professional experience by working stages abroad:

- * 2013-2014 -Visiting Professor Fellowship, School of engineering in Physics, Applied Physics, Electronics & Materials Science (PHELMA), INP Grenoble, France;).
- * 2015-Short Term Visiting Researcher Fellowships in Okayama University Japan
- * 2018-Short Term Visiting Researcher Fellowships in Okayama University Japan
- 2019-Japan Society for Promotion of Science (JSPS) Long Term Professor Fellowship, Okayama Japan

Personal skills and competences

- * Optical spectroscopies: UV-VIS-NIR Spectrophotometry, Spectroscopic Ellipsometry, Raman Spectroscopy, FTIR
- * Micro and Nanoelectronics and Photonics devices;
- * Nanomaterials for Energy harvesting and RF Microelectronics;
- * Conventional thin films preparation techniques (LPCVD, CVD, ALD, vacuum e-beam evaporation)

Mother tongue(s) **Romanian**

Other language(s)

Self-assessment
European level ()*

English

French

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user
B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user	C1	Proficient user

(*) [Common European Framework of Reference \(CEF\) level](#)

Organisational skills and competences

PROJECT MANAGER FOR INTERNATIONAL PROJECTS:

- * 2002-European Union Framework Programme-Growth-FP5, Modulation and anisotropic reflectance spectroscopies (FP5- G6RD-CT2000-00187), Research Grant Award, Principal Investigator
- * 2005-Science Foundation Ireland, High dielectric constant materials for future ICT, Research Grant Award, Co-Principal Investigator
- * 2005-European Union Framework Programme FP6-IST-FET Open, Novel and advanced transparent conductive oxides (FP6-IST-FET Open 511925), Research Grant Award, Principal Investigator

	<p>* 2006-European Union Framework Programme FP6-2004-IST-NMP-2, Rare Earth Oxide Atomic Layer Deposition for Innovation in Electronics (FP6-NMP- 16172), Research Grant Award, Principal Investigator</p> <p>* 2009-Ireland-France Ulysses Research Visits Award, Investigation of oxygen associated defects in semiconducting magnetic oxide Fe_{2-x}Ti_xO_{3-δ} for spintronic applications, Principal Investigator</p> <p>* 2012-European Union Framework Programme FP7 ICT, Carbon Based Smart Systems For Wireless Applications Grant agreement No 318352, Research Grant Award, Principal Investigator</p> <p>* 2016-Science Foundation Ireland, Design, Deposition and Exploitation of Novel Micro and Nano-scale Materials and Devices for Advanced Manufacturing, Research Grant Award, Co-Principal Investigator</p> <p>* 2019-2022, European Union Framework Programme Horizon 2020, NANO components for electronic SMART wireless systems-NANOSMART, Grant agreement No 825430, Research Grant Award, Principal Investigator,</p> <p>* 2020-2023 European Union Framework Programme Horizon 2020, FETOpen Active optical phase-change plasmonic transdimensional systems enabling femtojoule and femtosecond extreme broadband adaptive reconfigurable devices-PHEMTRONICS- Grant agreement No 899598, Research Grant Award, Principal Investigator</p> <p>* 2020-2023 European Union Framework Programme Horizon 2020, FETPROACT-EIC-05-2019 - FET Proactive: emerging paradigms and communities, Nanomaterials enabling smart energy harvesting for next-generation Internet-of-Things-NANO-EH, Grant agreement No 951761, Research Grant Award, Project Coordinator</p>
Technical skills and competences	<p>* Optical spectroscopies: UV-VIS-NIR Spectrophotometry, Spectroscopic Ellipsometry, Raman Spectroscopy, FTIR</p> <p>* Micro and Nanoelectronics and Photonics devices;</p> <p>* Nanomaterials for Energy harvesting and RF Microelectronics;</p> <p>* Conventional thin films preparation techniques (LPCVD, CVD, ALD, vacuum e-beam evaporation)</p>
Computer skills and competences	User of dedicated software for spectroscopic ellipsometry, Raman; image processing (Adobe Photoshop) text editing and, graphic presentations (MS Office, Power Point) running on PC.
Driving licence(s)	B
Additional information	<p>AWARDS</p> <p>* 2011- Best Paper Award, 34th International Semiconductor Conference, CAS 2011, IEEE Conference</p> <p>* 2018- Featured article in The Institution of Engineering and Technology Electronics Letters (19th April 2018 Vol.54 No.8, doi: 10.1049/el.2018.0978): Miniaturised phased antenna array for low-power wireless devices with beam steering at unprecedentedly-low voltages</p> <p>* 2019-Best Paper Award IEEE 42nd International Semiconductor Conference, CAS 2019, IEEE Conference</p> <p>INTERNATIONAL RECOGNITION THROUGH MEMBERSHIPS</p> <p>* 2003–present; Member of Board of Delegates of “European Material Society-E’MRS”</p> <p>* 2016; Founding member of “International Transparent Conductive Materials Research Network” TCM-NET</p> <p>COMMISSIONS OF TRUST: 2010-present</p> <p>Evaluator and Rapporteur activities:</p> <p>* European Metrology Research Programme (EMRP and EMPIR)</p> <p>* French National Research Agency (ANR)</p> <p>* Romanian Executive Unit for Financing Higher Education, Research, Development and Innovation (UEFISCDI)</p> <p>* European Union Horizon 2020 Research Programme</p>

* EU H2020 M-ERA.NET

* TWAS

EXAMINER, PHD THESIS: 2010 – present

* INSA de Rennes, France,

* INP Grenoble, France,

* Institute of Physical Chemistry I.G. Murgulescu Bucharest, Romania (4 PhDs)

* University Linköping, Sweden

INTERNATIONAL SCIENTIFIC EVENT ORGANISATION

* 2003-Organiser of Symposim M "Optical and X-Ray Metrology for Advanced Device Materials Characterization" E'MRS 2003 Spring Meeting Conference; Strasbourg, France

* 2005-Organiser of Symposium P "Current Trends in Optical and X-Ray Metrology of Advanced Materials for Nanoscale Devices" E'MRS 2005 Spring Meeting conference; Strasbourg, France

* 2007-Organiser of Symposium "Current Trends in Optical and X-ray Metrology of Advanced Materials and Devices II" at E'MRS 2007 Fall Meeting Conference; Warsaw, Poland

* 2012-Organiser of Symposium "Current Trends in Optical and X-Ray Metrology of Advanced Materials for Nanoscale Devices III" EMRS 2012 Spring Meeting conference; Strasbourg, France

* 2015-Organiser of Symposium "Current Trends in Optical and X-Ray Metrology of Advanced Materials for Nanoscale Devices IV" EMRS 2015 Spring Meeting; Lille, France

* 2017-Organiser of Symposium "Current trends in Optical and X-Ray metrologies of key enabling nanomaterials/devices for the Ubiquitous Society, renewable energy and health" (OptoX NANO), MTS2017&TeraNano8-OptoX NANO conference; Okayama, Japan

* 2018-Organiser Symposium "Current Trends in Optical and X-Ray Metrology of Advanced Materials for Nanoscale Devices V" EMRS 2018 Spring Meeting, Strasbourg, France

* 2019-Organiser of "Current trends in Optical and X-Ray metrologies of key enabling nanomaterials/devices" OptoX Nano 2019, Okayama, Japan

* 2021-Organiser Symposium "Current Trends in Optical and X-Ray Metrology of Advanced Materials for Nanoscale Devices VI" EMRS 2021 Spring Meeting, Strasbourg, France

SCIENTIFIC PAPERS

* 145 peer-review journal publications, Google Scholar: 2334 cites, h-index: 28

RESEARCHER UNIQUE IDENTIFIERS:

* ORCID - <https://orcid.org/0000-0003-0334-2439> ;

* Google Scholar: <https://scholar.google.com/citations?user=VoMfpKYAAAAJ&hl=en>

* <http://www.scopus.com/inward/authorDetails.url?authorID=7004613086&partnerID=MN8TOARS>

* 30 invited talks at international conferences

SELECTED RECENT PUBLICATION LIST (last three years)

1. M.Dragoman, M. Aldrigo, D. Dragoman, I. M. Povey, S. Iordanescu, A. Dinescu, A. Di Donato and M. Modreanu (2021). "Multifunctionalities of 2D MoS₂ self-switching diode as memristor and photodetector." *Physica E: Low-Dimensional Systems and Nanostructures* 126.
2. M. Dragoman, M. Aldrigo, J. Connolly, I. M. Povey, S. Iordanescu, A. Dinescu, D. Vasilache and M. Modreanu (2020). "MoS₂ radio: Detecting radio waves with a two-dimensional transition metal dichalcogenide semiconductor." *Nanotechnology* 31(6).
3. M. Dragoman, M. Modreanu, I. M. Povey, A. Dinescu and D. Dragoman (2020). "Reconfigurable horizontal-vertical carrier transport in graphene/HfZrO field-effect transistors." *Nanotechnology* 31(2).
4. Y.Takeuchi, A. Violas, T. Fujita, Y. Kumamoto, M. Modreanu, T. Tanaka, K. Fujita and N. Takeyasu (2020). "Hot Carrier Generation in Two-Dimensional Silver Nanoparticle Arrays at Different Excitation Wavelengths under On-Resonant Conditions." *Journal of Physical Chemistry C* 124(25): 13936-13941.
5. E. Chikoidze, C. Sartet, H. Mohamed, I. Madaci, T. Tchelidze, M. Modreanu, P. Vales-Castro, C. Rubio, C. Arnold, V. Sallet, Y. Dumont and A. Perez-Tomas (2019). "Enhancing the intrinsic p-type conductivity of the ultra-wide bandgap Ga₂O₃ semiconductor." *Journal of Materials Chemistry C* 7(33): 10231-10239.
6. O.Ishchenko, M., F. Hamouda, P. Aubert, O. Tandia, M. Modreanu, D. I. Sharovarov, F. Y. Akbar, A. R. Kaul and G. Garry (2019). Strongly Electronic-Correlated Material for Ultrafast Electronics Application. 18th International Conference on Nanotechnology, NANO 2018, IEEE Computer Society.
7. L.Pierantoni, M. Stocchi, M. Silvestrini, M. Ballicchia, D. Mencarelli, M. Dragoman, M. Aldrigo and M. Modreanu (2019). Efficient and versatile multiphysics/multiscale 3D model of fullerene single electron device. 18th International Conference on Nanotechnology, NANO 2018, IEEE Computer Society.

8. V.Kampylafka, A. Kostopoulos, M. Modreanu, M. Schmidt, E. Gagaoudakis, K. Tsagaraki, V. Kontomitrou, G. Konstantinidis, G. Deligeorgis, G. Kiriakidis and E. Aperathitis (2019). "Long-term stability of transparent n/p ZnO homojunctions grown by rf-sputtering at room-temperature." *Journal of Materiomics* 5(3): 428-435
9. M.Dragoman, M. Aldrigo, S. Iordanescu, M. Modreanu, I. Povey, D. Vasilache, A. Dinescu and C. Romanitan (2018). Low-Voltage Phase Shifters Based on $Hf_{1-x}Zr_xO_2$ Ferroelectrics Integrated with Phased Antenna Arrays. 48th European Microwave Conference, EuMC 2018, Institute of Electrical and Electronics Engineers Inc.
10. M. Dragoman, M. Modreanu, I. Povey, S. Iordanescu, M. Aldrigo, A. Dinescu, D. Vasilache and C. Romanitan (2018). "2.55 GHz miniaturised phased antenna array based on 7 nm-thick $Hf_{1-x}Zr_xO_2$ ferroelectrics." *Electronics Letters* 54(8): 469-470.
11. M. Dragoman, M. Modreanu, I. M. Povey, M. Aldrigo, A. Dinescu and D. Dragoman (2018). "Electromagnetic energy harvesting based on HfZrO tunneling junctions." *Nanotechnology* 29(44).
12. M.Dragoman, M. Modreanu, I. M. Povey, A. Dinescu, D. Dragoman, A. Di Donato, E. Pavoni and M. Farina (2018). "Wafer-scale very large memory windows in graphene monolayer/HfZrO ferroelectric capacitors." *Nanotechnology* 29(42).
13. T.Teranishi, Y. Yoshikawa, M. Yoneda, A. Kishimoto, J. Halpin, S. O'Brien, M. Modreanu and I. M. Povey (2018). "Aluminum Interdiffusion into $LiCoO_2$ Using Atomic Layer Deposition for High Rate Lithium Ion Batteries." *ACS Applied Energy Materials* 1(7): 3277-3282.
14. S. T. Zhang, M. Modreanu, H. Roussel, C. Jiménez and J. L. Deschanvres (2018). "Exploring the optical properties of Vernier phase yttrium oxyfluoride thin films grown by pulsed liquid injection MOCVD." *Dalton Transactions* 47(8): 2655-2661.
15. M.Dragoman, M. Modreanu, I. M. Povey, S. Iordanescu, M. Aldrigo, A. Dinescu, D. Vasilache, C. Romanitan and D. Dragoman (2018). "Current rectification effects in 6 nm thick $Hf_{1-x}Zr_xO_y$ ferroelectrics/Si planar heterostructures." *Physica E: Low-Dimensional Systems and Nanostructures* 104: 241-246.

16 September 2021



Dr. Mircea Gabriel Modreanu