

**Dr. Dana Cristea** (female) MSc in Electronics and PhD in Optoelectronics from “Politehnica” University, Bucharest, Romania. She is the head of Microphotronics Lab and the manager of the Core program IMT. Between 2002 and 2008 she was the Scientific manager of IMT. Her main research activities are in the fields of optoelectronic devices, photonic integrated circuits, optical-MEMS, micro-optics integration technologies. She is author or co-author of more than 100 papers published in journals and Conference Proceedings and holds 5 patents. Dr. Dana Cristea has coordinated more than project 25 national projects, participated in several FP6 and FP7, H2020 projects and was the vice-coordinator of the FP7 Project MIMOMEMS. She is currently the coordinator of the IMT core program, scientific manager of projects aiming at knowledge transfer to SMEs and of R&I projects on optoelectronic devices based on QDs and nanoplasmonic structures.

## Employment

Since 1994 **National Institute for R&D in Microtechnologies- IMT Bucharest**

- senior researcher
- head of Microphotronics Lab (since 1997)
- head of Department for Multidisciplinary Research and Scientific Director (2002 -2008).
- manager of the IMT Core Program (since 2016)

Since 1991 “**Politehnica” University Bucharest, Faculty of Electronics**

- associate professor (optoelectronics, integrated optics)

## Previous employment:

1982-1994 Research Institute for Electronic Components, Bucharest

- research scientist in the Optoelectronics Laboratory

## Relevant research areas:

- *Silicon photodetectors and optoelectronic integrated circuits - over 25 certified photodetectors and optoelectronic ICs;*
- *Photonic integrated circuits* for chemo-optical and biophotonic sensors (waveguides integrated with photodiodes for gas sensors, SPR-based sensors, microring resonators for bio-photonic sensors);
- Nano- and optoelectronic devices based on graphene, graphene composites and QDs (field effect, transistors, Schottky photodiode.);
- *Plasmonic nanostructures and metasurfaces- for photodetectors, filters, absorbers, sensors;*
- *Microoptics-* diffractive optics for security applications- design, modeling, new fabrication technique;

## Relevant expertise as a reviewer:

- **FP7 and H2020 projects:** ICT, NMBP, and FET-Open
- **Scientific papers:**  
*IEEE:* IEEE Trans. on Electron Dev.; Journal of Electron Device Society,  
*AIP:* Journal of Applied Physics  
*Royal Society of Chemistry:* RSC Advances, Lab on a Chip, Journal of Materials Chemistry); Journal of Micro/Nanolithography, MEMS, and MOEMS  
*SPIE:* J. Smart Structures and Systems;  
*Springer:* Journal of Sol-Gel Science and Technology (*r*);  
*Elsevier:* Optical Materials, Sensor and Actuators (*Elsevier*); I  
*MDPI:* Nanomaterials, Sensors
- Member of TPC for **IEEE ESSDERC** Conference- since 2013 and reviewer for IEEE ESSDERC 2013-2017; IEEE International Semiconductor Conference 1992-2016; International Conference on Electronics, Circuits and Systems IECS.

## Recent EU projects

- **EURONANOFORUM 2019** – (ENF 2019), Nanotechnology and Advanced Materials progress Under H2020 and Beyond., call H2020-IBA-LEIT-NMBP-Romanian- Presidency-2018 (H2020-IBA-LEIT-NMBP-Romanian-Presidency-2018), member in the management structure

- **DNMF\_net** - Network of nano research infrastructures in the Danube region (Project supported by the German Federal Ministry of Education and Research (BMBF) under the "ideas competition for the establishment and development of innovative R&D networks with partners in the Danube States", 2017-2019)
- **FLEXPAET**- Flexible Patterning of Complex Micro Structures using Adaptive Embossing Technology (IP- FP7- NMP) member in steering WP leader, *leader of the Romanian team*
- **MOMOMEMS**- European Centre of Excellence in Microwave, Millimetre Wave and Optical Devices, based on Micro-Electro-Mechanical Systems for Advanced Communication Systems and Sensors- (FP7-Capacities)– *vice-coordinator*
- **WAPITI**- Waferbonding and Active Passive Integration Technology and Implementation - STREP FP6/IST –Photonics
- **4M**- Multi-Material Micro Manufacture: Technologies and Applications NoE FP6/NMP - team leader for micro-optic cluster

#### Recent ERDF projects:

- **TGE-Plat- Partnership for using Key Enabling Technologies on a platform for interaction with companies aiming at** Knowledge transfer to Romanian SMEs- area KETs for safety and security (ERDF project- 2016-2021- *scientific manager*)
- **Subprojects:**
  - ✓ **High quality forming image optical system with diffractive optical elements in LWIR spectral range for multisensory systems-SOFID**- cooperation with ProOptica SA
  - ✓ **Technology for anti-counterfeiting metal microparticles**—cooperation with Optoelectronica 2001 S.A.
  - ✓ **Technology development for combustion gases sensors with hybrid nanocomposite materials based on titan dioxide nanotubes and graphene**

#### Recent National projects

- *Plamonic and dielectric metasurfaces as platforms for fluorescence enhancement*, 2020-2022, National Program PNIII
- *Complex technologies for the development of high security, multi-layered intelligent holographic labes*, 2020-2022, National Program PNIII
- *Family of optical imaging systems with zoom for the MWIR spectral domain with applications in security (MWIRO)*, 2020-2022, National Program PNIII
- *Sensors and Integrated Electronic and Photonic Systems for Security- Infrared sensors for dangerous gases detection*, 2018-2020- Complex project National Program PNIII
- *Developing quantum information and quantum technologies- subproject: Developing an integrated quantum photonics platform for quantum technologies using 3D lithography-* 2018-2020-Complex project National Program PNIII
- *Fabrication of high quality holographic labels for product identification - (2016-2018)-National Program PNIII*
- *Technology for multispectral photodetectors with applications in observation and surveillance optical systems (2016-2018)-National Program PNIII*
- *Thin film photodetectors - new concepts and studies for aerospace applications, program "STAR or Romanian Space Agency"*, 2012-2015
- *Plasmonic nanostructures and metasurfaces for light concentration and manipulation (focus on IR , SWIR, MIR wavelength range)- IMT Core Program 2016-2018*
- *Technologies for nanostructures and nanomaterials for optoelectronics and energy conversion IMT core program CONVERT, 2012-2015*
- *Diffractive optical elements with 3D profile, IMT program CONVERT, 2009-2015*
- *Multifunctional molecular architectures for organic electronics and nanotechnology- theoretical and experimental studies National project- program « Ideas », 2009-2011*
- *Mixed technologies for microphotonics – (CEEX) 2005-2008*

#### Patents

- R.Muller, D.Cristea, et.al, *Fabrication process for silicon based biosensor integrated with a polymeric optical waveguide*, OSIM, Patent No 122382,
- P.Obreja, D.Cristea, et.al., *Replication technology for polymer-based optical microrezonators* , OSIM, Patent A/01026/
- D.Cristea, F.Craciunoiu *Fabrication of an optical field effect transistor*, OSIM, Patent No. 120514
- D.Cristea, E.Manea, *Method for freestanding micromechanical structures fabrication using Si<111> etching techniques*, OSIM, Patent 119424