

## PERSONAL INFORMATION

## Massimo Catalano



- Affiliation**  
National Council for Research  
Institute for Microelectronics and Microsystems  
Campus Universitario ECOTEKNE, ed A3, Via Monteroni, 73100 Lecce
- +39 0832 422517 +39 347 6517950
- [massimo.catalano@cnr.it](mailto:massimo.catalano@cnr.it)
- <https://www.linkedin.com/in/massimo-catalano-48876a69/>

Enterprise	University	EPR
<input type="checkbox"/> Management Level	<input type="checkbox"/> Full professor	<input checked="" type="checkbox"/> Research Director and 1st level Technologist / First Researcher and 2nd level Technologist / Principal Investigator
<input type="checkbox"/> Mid-Management Level	<input type="checkbox"/> Associate Professor	<input type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

## WORK EXPERIENCE

From March 1998 to present

### CNR-IMM NATIONAL COUNCIL FOR RESEARCH (CNR-IMM)

*Senior Research Scientist | Lecce, Italy | present occupation*

Responsible for the installation and managing of a state-of-the-art facility for Transmission Electron Microscopy (TEM) of radiation sensitive materials, and of the relevant sample preparation facility. TEM observation on biological materials.

Responsible for the Laboratory of Structural and Chemical Characterization and Nanofabrication.

Supervises and trains junior staff members, technicians and junior scientists.

Assisted both undergraduate and graduate students and young scientists with in-depth data research in both lab and office environments.

Represents CNR-IMM in the managing of the facility.

Responsible scientist for laboratory safety.

Business or sector Research

AUGUST 2020 – SEPTEMBER 2021

### ALBERT EINSTEIN COLLEGE OF MEDICINE – THE BRONX, NEW YORK, US

*Assistant professor | (on leave from CNR-IMM)*

Contributes to the design of a MASER device to treat Alzheimer disease and other brain pathologies by imaging the brain morphology and activity. Contributed to the submission of patents.

Business or sector Research

SEPTEMBER 2015 – DECEMBER 2019 **UNIVERSITY OF TEXAS AT DALLAS, DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING**

*Senior Research Scientist | Richardson, TX | (on leave from CNR-IMM)*

Performed support activity to industry for the characterization of Si- and GaN-based materials and devices at the nanoscale, by using Transmission Electron Microscopy techniques.

Provided Transmission Electron Microscopy observations of semiconducting layers deposited on miscut substrates by several deposition methods.

Provided full characterization of several samples in order to assess the growth technique or understand their physical properties as support to various internal and external research groups.

Performed TEM characterization of nanomaterials (nanocubes, nanoframes, nanotubes, nanowires).  
Supported the research activities on wafer bonding by characterizing interfaces between slightly misoriented materials.  
Studied 2D-Materials (graphene, hexagonal boron nitride and Transition Metal Dicalchogenides (TMD)), and provided support to several research groups.  
Extensive experience in Focused Ion Beam (FIB) preparation of both plan views and cross sections by using the *in-situ* lift out method.  
Performed structural and compositional characterization of Poly-silicon films.  
Recently worked on the *in-situ* and *ex-situ* characterization of Poly-silicon *e-fuses*, in order to assess the kinetics of the *e-fuses* blowing process.

MARCH 1998 – SEPTEMBER 2015

## NATIONAL COUNCIL FOR RESEARCH (CNR-IMM)

*Senior Research Scientist | Lecce, Italy | March 1998 – September 2015*

Responsible for the Laboratory of Structural and Chemical Characterization and Nanofabrication.

Provided characterization support to the growth of several heterostructures, nanomaterials, thin films and other materials systems.

Supervised and trained junior staff members, technicians and junior scientists.

Assisted both undergraduate and graduate students and young scientists with in-depth data research in both lab and office environments.

Took an active role in departmental meetings, sometimes occupying responsibility roles.

Responsible scientist for laboratory safety.

## EDUCATION

**Master of Science** – major in Physics

*Laurea summa cum laude*

University of Lecce

Lecce, ITALY, 1987

## ADDITIONAL INFORMATION

Vice president of the Italian Society for Microscopical Sciences (S.I.S.M)

Director of the Journal of the Italian Society for Electron Microscopy

Experimental thesis on "Transmission Electron Microscopy study of extended defects in III-VI semiconductor compounds".

In 2020 he obtained the TOEFL (Teaching English as a Foreign Language).

Built and maintained the web page of the Italian Society for Electron Microscopy.

Several jury duties as scientific expert.

## AFFILIATIONS

SIMS: Italian Society for Microscopical Science

EMS: European Microscopy Society

MSA: Microscopy Society of America

## PUBLICATIONS

total number of publications in peer-review journals 136

total Impact Factor (IF) (average IF/paper),

total number of citations 3297

H index 30

1. G Della Rosa, D Vona, A Aloisi, R Ragni, R Di Corato, M Lo Presti, ... "Luminescent Silica-Based Nanostructures from in Vivo Iridium-Doped Diatoms Microalgae", ACS Sustainable Chemistry & Engineering 7 (2), 2207-2215 3 (2018)
2. Arif Ul Alam, Yiheng Qin, Massimo Catalano, Luhua Wang, Moon J Kim, Matiar Rahman Howalder, Nan-Xing Hu, M Jamal Deen, "Tailoring MWCNTs and  $\beta$ -Cyclodextrin for Sensitive Detection of Acetaminophen and Estrogen", ACS Applied Materials & Interfaces [American Chemical Society]
3. A Taurino, MA Signore, M Catalano, MJ Kim, "Structural Switch of AlN Sputtered Thin Films From (101) to (002) Orientation, Driven by the Growth Kinetics", Microscopy and Microanalysis 23 (S1), 1496-1497 (2017)
4. A Taurino, MA Signore, M Catalano, MJ Kim, "(101) and (002) oriented AlN thin films deposited by sputtering", Materials Letters 200, 18-20, (2017)
5. Padmanabhan, Sanosh Kunjalukkal; Salvatore, Luca; Gervaso, Francesca; Catalano, Massimo; Taurino, Antonietta; Sannino, Alessandro; Licciulli, Antonio "Synthesis and Characterization of Collagen Scaffolds Reinforced by Eggshell Derived Hydroxyapatite for Tissue Engineering", Journal of Nanoscience and Nanotechnology, 15 (1), (2015) 504-509, DOI: 10.1166/jnn.2015.9489



