

MASSIMO CATALANO

- <https://www.le.imm.cnr.it/users/massimocatalano>
 - https://scholar.google.com/citations?user=1aFSZ_wAAAAJ&hl=en
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SKILLS

- Structural and analytical characterization
 - Scanning and Transmission Electron Microscopy (SEM-TEM)
 - Scanning Transmission Electron Microscopy (STEM)
 - *In-situ* Transmission Electron Microscopy
 - Sample preparation by Focused Ion Beam (FIB)
 - Electron Energy Loss Spectroscopy (EELS)
 - Energy Dispersive X-Ray Spectroscopy (EDS)
 - Semiconductors
 - Nanomaterials
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WORK HISTORY

UNIVERSITY OF TEXAS AT DALLAS, DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING

Senior Research Scientist | Richardson, TX | September 2015 – present (On leave of absence from CNR-IMM Lecce since September 2015)

- 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.

NATIONAL COUNCIL FOR RESEARCH (CNR-IMM)

Senior Research Scientist | Lecce, Italy | March 1998 – present

- 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

ACCOMPLISHMENTS

- 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

CERTIFICATIONS

TOEFL as of May 27, 2020

LECCE 17/09/2020

