

PERSONAL INFORMATION

Massimo Bersani



✉ bersani@fbk.eu

WORK EXPERIENCE

1/1/2024-presente

Researcher Senior at FBK, Unit Leader of Materials and Topologies for Sensors and Devices Line (MTSD) of the Centre of Sensors and Devices (FBK-S&D).

Fondazione Bruno Kessler, Via Sommarive 18, 38123 Povo (Tn), Italy. <https://www.fbk.eu/en/>

Research unit responsible
Management of 25 Researchers/technicians
Research Fields:
Materials Characterization:
Environmental Sensor
Quantum Technologies
Superconductivity

1/1/2021-31/12/2023

Researcher Senior at FBK, Program Manager of the Centre of Sensors and Devices (FBK-S&D), working in the direction staff.

Fondazione Bruno Kessler, Via Sommarive 18, 38123 Povo (Tn), Italy. <https://www.fbk.eu/en/>
Industrial research activities coordination
Support to management activities of the FBK-S&D
Management of the industrial and institutional partnerships;
Member of management board of the FBK-S&D
Valuable activity in projects writing
Definition and implementation of FBK-S&D marketing plan
Direct involvement in financed projects

1/1/2017-12/12/2020

Researcher Senior at FBK, Program Manager of the Centre Materials and Microsystems (FBK-CMM), working in the direction staff.

Fondazione Bruno Kessler, Via Sommarive 18, 38123 Povo (Tn), Italy. <https://www.fbk.eu/en/>
Industrial research activities coordination
Support to management activities of the FBK-S&D
Management of the industrial and institutional partnerships;
Member of management board of the FBK-S&D
Valuable activity in projects writing
Definition and implementation of FBK-S&D marketing plan
Direct involvement in financed projects

2018-2020

Professor of Elements of Condensed Matter Physics

Engineering department, La Sapienza University Rome Italy. 30 hours. <https://www.uniroma1.it/it/>

10/8/2017-18/10/2017

Visiting Professor at UnoChapecò

UnoChapecò Santa Catarina Brasil, <https://www.unochapeco.edu.br/>

Teaching:

- 45-hours course: Nanoscience and Nanotechnology
- 24-hours course: Innovation Management
- 8-hours course: Project Planning and Elaboration
- 20-hour course: Entrepreneurship with innovation

- 1/3/2014-1/1/2017 **Researcher Senior at FBK, strategic marketing responsible for MNF (Micro and Nano Facility)**
 Fondazione Bruno Kessler, Via Sommarive 18, 38123 Povo (Tn), Italy. <https://www.fbk.eu/en/>
 Industrial research activities coordination
 Coordination of marketing activities
 Management of the industrial and institutional partnerships;
 Member of management board of the FBK-S&D
 ▪ Direct involvement in financed projects
- 2014-present **Advisory board member of the FIM department at University of Modena**
 Unimore, <https://www.unimore.it/>
- 20/6/2014-20/9/2014 **Visiting Researcher at University of Maryland USA**
 Maryland University, College Park www.umd.edu
 ▪ Research activity on Atomic Layer Deposition;
 ▪ He Microscopy
 ▪ Patent Writing
- 2008-2014 **Researcher Senior at FBK (MiNALab (Mico Nano Analytical Laboratory; research unit responsible)**
 Fondazione Bruno Kessler, Via Sommarive 18, 38123 Povo (Tn), Italy. <https://www.fbk.eu/en/>;
<http://minalab.fbk.eu/>
 Material characterization research
 Development of new analytical methodology
 Analytical facility coordination
 Nanomaterial and nanotechnology research
 Researchers coordination (around 12 years man)
 Financed project coordination;
 Budget responsibility
- 2003-2008 **Researcher R2 level at ITC-irst, MAME line (Materials and Analysis for Microelectronics) responsible Physical and Chemical Surfaces and Interfaces Division .**
 ITC-irst, Via Sommarive 18, 38123 Povo (Tn), Italy.
 Research on semiconductor technology
 SIMS analyst
 Material characterization research
 Development of new analytical methodology
 Activity for industrial projects and service
- 1997-2003 **Research scientist of the Physical and Chemical Surfaces and Interfaces Division at ITC-irst**
 ITC-irst, Via Sommarive 18, 38123 Povo (Tn), Italy
 Research on semiconductor technology
 SIMS analyst
 Material characterization research
- 1994-1997 **Postdoctoral fellow SGS-Thomson Microelectronics at CMBM (Materials Center and Medical Biophysics) Advanced Material Division**
 ST-Microelectronic Agrate Brianza
 Research on semiconductor technology
 SIMS analyst
- 1993-1994 **Grant at Physics Department of Modena University, Italy**
 Unimore, <https://www.unimore.it/> Physic Department
 ▪ Research on materials characterization

EDUCATION AND TRAINING

May 2015 December 2016

Executive Mater in Business Administration

University Luiss Guido Carli Rome
(<https://businessschool.luiss.it/offerta-formativa/executive-program/>)

Core courses:

Accounting; Corporate Governance e compliance; Financial accounting, People management; Corporate organization; Project management; Corporate Strategy; Marketing; Operational; Business Plan Elaboration

December 1993

Physic Degree

University of Modena and ReggioEmilia
(<https://unimore.it>)

PERSONAL SKILLS

Mother tongue(s)

Italian

Other language(s)

English	C2
France	A1
Portuguese	B2

Job-related skills

Project management:

EngSurf-Twin H2020-EU.4.b. - Twinning of research institutions (about 900.000 euro funding) FBK responsible

UNINANO Erasmus+ (about 200.000 euro funding) FBK responsible

EU ANNA FP6 I3 (about 6.000.000 euro funding), Coordinator

EU Impulse FP 5 (about 2.300.00 euro funding), ITC-irst responsible

EU-ILSIMS FP5 (about 1.000.000 euro funding), ITC-irst responsible

Responsible of several regional financed projects

Responsible of several contracts with industries for a total funding over 1.000.000 euro

Technical competences

Analytical methodology development for dopant distribution determination in semiconductor materials. The work is focused on ultra shallow junctions in order to determine dopant diffusion mechanisms and depth distribution.

Extraction of new knowledge from high dimensional mass spectrometry data through multivariate data analysis techniques to solve specific problems in the agricultural and food chemistry field

Application of surface analytical multi-techniques approach to fully characterize industrial coating for metal substrates. Support Industrial research and development by using industrial deposition equipment joint to state of art analytical approach

Physics and Materials Science in semiconductor technology. Experimental characterization of semiconductors, interfaces, microelectronics materials.

Development of innovative X-ray diffraction instrumentation. Management of Prototype instruments realization.

Multitechnique analytical approaches on various surface science applications

Analytical industrial service

Corporate Governance e compliance

People management; Corporate organization;

Project management;

Corporate Strategy;

Marketing;

Business Plan Elaboration

Events organization

2023 Member of Organizing committee of Nanoinnovation Conference;

<https://www.nanoinnovation2023.eu/home/index.php/organization/committees/organizing-committee>

2022 Member of Organizing committee of Nanoinnovation Conference;
<https://www.nanoinnovation2022.eu/home/index.php/organization/committees/organizing-committee>
2021 Member of Organizing committee of Nanoinnovation Conference;
<https://www.nanoinnovation2021.eu/home/index.php/organization/committees/organizing-committee>
2020 Member of Organizing committee of Nanoinnovation Conference;
<https://www.nanoinnovation2020.eu/home/index.php/organization/committees/organizing-committee>
2019 Member of Organizing committee of Nanoinnovation Conference;
<http://www.nanoinnovation2019.eu/index.php/committees/organizing-committee>
Local committee chairman of SIMS XVIII -18th International Conference on Secondary Ion Mass Spectrometry; Riva del Garda from 18th to 23rd September 2011; <http://www.simsxviii.org>.
Organizer of ATHENIS WORKSHOP "IC Technology for Harsh Automotive Applications" December 15, 2010 Fondazione Bruno Kessler, Povo, Trento
Co-organizer of ALTECH workshop 216 ECS Meeting | Wien, Austria | October 4-9, 2009
Co-Organizer of European Workshop on "Recent Advances in Ultra Shallow Junctions", 24-25 November 2004, Povo, Trento, Italy
Scientific committee member of symposium B "Material science issues in advanced CMOS source-drain engineering" at E-MRS 2004 Spring Meeting Strasbourg France

Mentoring Experience

DfP technologies producing X-ray instrumentation; role business and innovation project consultant
Industrial projects consultant (including SME in H2020) Novurania
Start up Indivenire, role business consultant
Start up SMETRO; role business consultant

2018 Full professor Qualified

Tutoring

January 2002 - March 2003: PhD Enrico Boscolo Marchi r
March 2003- March 2006: Post-doc Giancarlo Pepponi r
March 2004- March 2007: Post-doc Salvatore Gennaro r
May 2010-May 2013 : Post-doc Florian Meirer
March 2018 – November 2020: Post doc Simone di Mare

ADDITIONAL INFORMATION RELEVANT TO QUANTUM SCIENCE AND TECHNOLOGY

Industrial collaborations

AIRI representative member

Transient enhanced diffusion of arsenic in silicon S Solmi, M Ferri, M Bersani, D Giubertoni, V Soncini *Journal of applied physics* 94 (8), 4950-4955. <https://doi.org/10.1063/1.1609640>

Mechanical properties and strain monitoring of glass-epoxy composites with graphene-coated fibers H Mahmood, L Vanzetti, M Bersani, A Pegoretti *Composites Part A: Applied Science and Manufacturing* 107, 112-123, <https://doi.org/10.1016/j.compositesa.2017.12.023>

Vacancy-engineering implants for high boron activation in silicon on insulator AJ Smith, NEB Cowern, AJ Smith, NEB Cowern, R Gwilliam, BJ Sealy, B Colombeau, EJH Collart, Salvatore Gennaro, Damiano Giubertoni, Massimo Bersani, Mario Barozzi, *Applied physics letters* 88 (8), 082112. <https://doi.org/10.1063/1.2178487>

Correlation of local structure and electrical activation in arsenic ultrashallow junctions in silicon D. Giubertoni, G. Pepponi, S. Gennaro, M. Bersani, M. A. Sahiner, S. P. Kelly, R. Doherty, M. A. Foad, M. Kah, K. J. Kirkby, J. C. Woicik, P. Pianetta, *journal of applied physics* 104 (10), 103716. <https://doi.org/10.1063/1.3026706>

Luminescence from Erbium-Doped Silicon Epi Layers Grown by Liquid-Phase Epitaxy M. Bersani, S. Pizzini, M. Donghi, S. Binetti, G. Wagner *Journal of the Electrochemical Society* 145 (1), L8-L11. <https://doi.org/10.1149/1.1838198>

Effect of graphene nanoplatelets structure on the properties of acrylonitrile-butadiene-styrene composites S Dul, L Fambri, C Merlini, GMO Barra, M Bersani, L Vanzetti, A Pegoretti *Polymer Composites* 40 (S1), E285-E300. <https://doi.org/10.1002/pc.24645>

Depth profile investigations of silicon nanocrystals formed in sapphire by ion implantation S Yerci, I Yildiz, M Kulakci, U Serincan, M Barozzi, M Bersani, R Turan *Journal of Applied Physics* 102 (2), 024309. <https://doi.org/10.1063/1.2756622>

Real-time observation and optimization of tungsten atomic layer deposition process cycle W. Lei, L. Henn-Lecordier, M. Anderle, G. W. Rubloff, M. Barozzi and M. Bersani. *JVST B* 24, 780 (2006) <https://doi.org/10.1116/1.2184320>

Nanotechnology 2: characterization and applications

Mustafa Ersöz, Mine Sulak, Massimo Bersani, Arzum Işıtan, Meltem Balaban, Zeha Yakar, Cumhuriyet Gökhan Ünlü, Volkan Onar. Book. Editor: Pamukkale Üniversitesi Yayını 2018

Omnidirectional and broadband photon harvesting in self-organized Ge columnar nanovoids

D Chowdhury, S Mondal, M Secchi, MC Giordano, L Vanzetti, M Barozzi, M. Bersani, D. Giubertoni, F. Buatier de Mongeot. *Nanotechnology* 2022

Quality management system and accreditation of measurements in a surface science laboratory: the case study of MiNALab.

E Iacob, L Vanzetti, S Gennaro, F Pecoraro, D Giubertoni, M Barozzi, M. Bortolotti, G. Pepponi, M. Fedrizzi, M. Bersani. *Surface and Interface Analysis* 46 (10-11), 927-930. <https://doi.org/10.1002/sia.5490>

Trento 20/4/2024