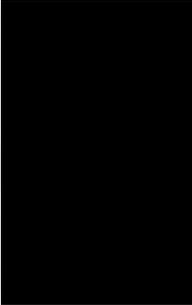


Curriculum vitae of Valentina Casalegno

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|---|--|---|--|
|  | Place and date of Birth: Torino, 28/09/1977 | | |
| | Citizenship: Italian | | |
| | Work address: | | |
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Education

Laurea (cum laude) in Materials Engineering (December 2001) at Politecnico di Torino (Italy).

Dissertation: “Joining of Carbon/Carbon composites for nuclear fusion applications”

Ph.D. in “Materials Science and Technology”, date of award: 13-03-2006, with a thesis: “Joining of composites materials for nuclear fusion applications”, tutor: Prof. P. Appendino, Materials Science and Chemical Engineering Department of Politecnico di Torino.

Current position: Assistant Professor at Politecnico di Torino

Awards and recognition

2002: Prize “Optime” from the Industrial Union of Turin as one of the best 100 students of the year

Postgraduate formation and research experience

- March 2002-December 2002: ASP (Association for Scientific and Technical development of Piemonte) research grant at Politecnico di Torino, title “Joining of C/C composites for nuclear applications”
- January 2006- June 2008 :Post-doc researcher at DISMIC (Materials Science and Chemical Engineering Department) of Politecnico di Torino (within European Network of Excellence ‘Knowledge-based multicomponent materials for durable and safe performance’ KMM-NoE- under the contract no. NMP3-CT-2004- 502243)
- Research consultancy for CNR (joining of composites for nuclear fusion applications), 2002
- Research consultancy for International Institutes (research activity on multifunctional materials and FGM), 2008.

- September-October 2005: research stay at Institute for Energy Research - Materials Microstructure and Properties, IEF-2, Forschungszentrum Jülich FZJ (Germany) (tutor Dott. J.Linke, Dott. G.Pintsuk)
- October 2007 research stay at Department of Materials , Imperial College of London (United Kingdom) (tutor Prof. A.Boccaccini)
- July 2008- April 2011 Post-doc research fellow at DISMIC (Materials Science and Chemical Engineering Department) of the Politecnico of Torino (Fellowships for junior researchers, co-financed by the Politecnico di Torino, the Regione Piemonte, and the CRT Foundation)
- Term-contract worker (June 2011-September 2011) as a post-doc research fellow at DISAT (Department of Applied Science and Technology) of the Politecnico of Torino (Research activity on innovative joints for ceramic and metallic materials for ultra-high temperature applications)
- October 2011- September 2013: post-doc research fellow at DISAT (Department of Applied Science and Technology) of the Politecnico of Torino (“Study of an innovative Cu-CFC joint, for advanced energy applications”, Cariplo fellowship)
- October 2013- December 2015: post-doc research fellow at DISAT (Department of Applied Science and Technology) of the Politecnico of Torino (“Study of metallic, ceramic and composites joints for advanced applications (aerospace, automotive, etc)”, ADMACOM project and Jolie project)

Current position: Tenure track researcher (ricercatore a tempo determinato di tipo B L240/10 art.24 c.3b) Department of Applied Science and Technology (DISAT) SC 09/D1 – SSD ING-IND/22

Research activity

- Joining of advanced materials (ceramic and ceramic composite materials) for applications in the fields of nuclear reactors and high temperature; results obtained during this research activities led to one patent: an innovative technique to join carbon matrix composites (FERRARIS M; CASALEGNO V; SALVO M., Process to join carbon based materials to metals and its applications, 2005, Publication info: EP1685079 (A1) — 2006-08-02).
- Development of CMC joining (SiC/SiC) with low activation properties for fission and fusion applications (Gen IV, DEMO, etc).
- Development, production and characterization of glass-ceramic and composite sealing materials for Solid Oxide Fuel Cells (SOFCs).
- Joining of ultrastable C/C composites for aerospace applications (cooperation with Thales Alenia Space (France)).
- Joining of metallic materials (Mo and Cu alloys) for particle accelerators (CLIC, Compact Linear Collider) (cooperation with CERN, Switzerland).

Participation to Scientific Projects:

European projects:

- **KMM-NoE Network of Excellence (VI PQ):** Knowledge based Multicomponent Materials for Durable and Safe Performance
- **Extremat:** New Materials for Extreme Environments (IP, VI PQ)
- **MATRANS** (VII PQ): Micro and Nanocrystalline Functionally Graded Materials for Transport Applications

- **FEMaS** (Fusion Energy Materials Science -Coordination Action) (VII PQ)
- **ESA LET-SME ACTIVITIES** “Carbon Based Adhesive”
- **Italy-Japan bilateral project** (collaboration with the Institute of Advanced Energy, Kyoto University, Gokasho Uji, Kyoto) : 5 years funded (2010- 2015) by the Italian Foreign Affairs (Ministero Affari Esteri) within the project “High National Relevance” (Progetti di Grande Rilevanza Nazionale) on “Protective joining and coating of SiC/SiC composites for high temperature applications”.
- **GlaCERCo-** Glass and Ceramic Composites for High Technology Applications (Marie Curie ITN): ESR4
- **JOLIE** (JOining of LIghtweight alloys to advanced FGM mEtal-ceramic material , Matera+, EU project)
- **Matisse** (Materials’ Innovations for a Safe and Sustainable nuclear in Europe) (VII PQ) 2013-2017
- **ADMACOM:** Advanced manufacturing routes for metal/Composite components for Aerospace (VII PQ) 2013-2016.
- **NEXTOWER** (Advanced materials solutions for next generation high efficiency concentrated solar power (CSP) tower systems for next generation high efficiency concentrated solar power (CSP) tower systems) - H2020 European Project NMBP-17-2016
- **IL TROVATORE** (Innovative cladding materials for advanced accident-tolerant energy systems). H2020 European Project NFRP-2016-2017-01- PROPOSAL N°740415.
- **CoACH** (Advanced glasses, Composites And Ceramics for High growth Industries). H2020 European Project H2020-MSCA-ITN-2014 - GA 642557
- **GreenCompo- Green Factory for Composites-** Piattaforma Fabbrica Intelligente Regione Piemonte
- **CASTLE** - CABin Systems design Toward passenger wellBeing PROGRAMMA CLEAN SKY 2 - CALL ID: H2020-CS2- CPW02-2015-01 - TOPIC-AIR-02-08
- EURATOM project: **Enabling Research Program** (CfP-WP14-ER-01/FZJ-10) “Enabling Research Project - Optimization and characterization of tungsten steel joints for the plasma facing wall using different coating technologies including FGM techniques”.

National projects

- Two-year cofin 2001-2002 “Materials for thermonuclear fusion”, in cooperation with Prof. Zanino, Energetics Department, Politecnico di Torino.
- Two year cofin 2004-2005 “ITER High heat-flux components: innovative materials, and safety analysis in cooperation with prof. Zucchetti, Energetics Department, Politecnico di Torino.
- Two-year Cofin 2007-2008 “High heat flux component for ITER: advanced materials and safety aspects for the blanket and the first wall”.
- JOINHT (CARIPLO, from April 2011) “Study of an innovative Cu-CFC joint, for advanced energy applications”
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Consultancy services:

- Schott Ltd. (Germany)
- S.T.E.R (Italy)
- Cantine Canelli (Italy)

Participations to industrial research contracts:

- ENEA- Frascati - Roma (2 contracts: glass coatings on ceramic composites)

- ENEA-EFDA (1 contract: C/C to Cu joints , thermonuclear fusion)
- ANSALDO Energia-Genova (2 contracts: C/C to Cu joints , thermonuclear fusion)
- Thales Alenia Space- France (2 contracts: C/C composites joints for aerospace, C/C to Al composite joints for aerospace applications)
- CERN-Switzerland (1contract: development of a brazing process for molybdenum to copper alloy -CuZr)
- CTP (Ceramic Tubular Products) (nuclear fission products)

On going industrial research contracts

- **BREMBO SGL Carbon Ceramic Brakes** S.p.A., Italy: “Realizzazione di un materiale in grado di unire in maniera stabile e proteggere da corrosione galvanica la zona di contatto CCM/lega Al, in condizioni di esercizio, da applicare localmente”
- **SORIN GROUP** Italia S.r.l, Italy: “Controlli non distruttivi su componenti valvolari: leaflets di valvole cardiache meccaniche in carbonio pirolitico a diversi gradi di rifinitura superficiale”
- **AIRBUS DEFENCE AND SPACE GMBH** , Germany: “INJAT: Plasma alternative”

Teaching activity

At Politecnico of Torino (Italy) as training teacher and tutor of “Ceramic Materials” , “Materials Technology and Applied Chemistry”, “Materials science and Technology” (from 2003 to 2015) for Energetic Engineering, Materials Engineering, Mechanical Engineering and Automotive Engineering (International course).

Training offices as regular professor (“professore titolare”)

In charge of the course of *Scienza e Tecnologia dei Materiali* (Materials Science and Technology) and *Tecnologia dei materiali da costruzione* (Technology of construction materials) at Politecnico di Torino as Regular Professor – Professore Titolare (Italian Language): since February 2016

Skills

Synthesis and characterization of metallic and glass/glass-ceramic systems; glass design and manufacturing, melting, mixing, casting. Optical microscopy (heating microscopy, wettability of glasses and metals on solid surfaces); electron microscopy and compositional analysis: SEM, FESEM, EDS; Calorimetry: DSC, TGA, DTA; X-Rays Diffraction (standard and micro XRD analysis) . Mechanical testing: macro and micro-hardness, standard mechanical tests. Software program for managing of experimental data (X-Pert HighScore, Sci-Glass, INCA).