

PROF. CATERINA RIZZI

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1. SUMMARY

1.1 EDUCATION AND CURRENT POSITION

Caterina Rizzi was awarded a doctoral degree in Physics at Università di Milano in 1985 and, currently, is Full professor (since 2001) and Head of the Department of Management, Information and Production Engineering, Università di Bergamo.

1.2 ACADEMIC POSITIONS

- 2001- Università di Bergamo, Full Professor, Engineering Campus.
 1995-2001 Università of Parma, Associate professor, Faculty of Engineering.
 1992-1995 Università di Napoli Federico II, Associate professor, Faculty of Engineering.

1.3 PREVIOUS POSITIONS

- 20 Dec 1989- 30 Oct 1992 **Researcher** at the coordination board of the targeted project on robotics of CNR (National Research Council).
 Dec 1987 – Nov 1988 Italcad Tecnologie e Sistemi's **scholarship** at CNR (National Research Council) – IMU (Institute for industrial automation).
 15 Nov 1986 – 14 Nov 1987 Italcad- Selenia Autotrol's **scholarship** at Politecnico di Milano, Department of Mechanical Engineering.
 15 Nov 1985-14 Nov 1986 **Fellow** at Politecnico di Milano, Department of Mechanical Engineering.

1.4 RESEARCH AREAS

At present, she coordinates the **V&K-Virtualisation & Knowledge** (www.unibg.it/vk) research Group composed by **8 people** (2 researchers, 2 PhD students and 4 research assistants). Research activities are carried out within the framework of European, national (e.g., 6th and 7FP EU programmes, Industria 2015) and projects and research contracts with private institutions and industrial companies.

Scientific competences concern methodologies and ICT tools to support the product development process: from CAx to PDM systems and to systems for knowledge management and systematic innovation (e.g., TRIZ) in different industrial contexts.

In particular, **since 1985**, she carried out research activities in the following **research areas**: Solid and surface modelling, Graphical user interface and related development tools, 3D CAD systems for automotive industry, Virtual prototyping and Virtual/Augmented Reality, Knowledge Based Systems, Physics-based modelling and simulation of non rigid products; Virtual Ergonomics and Digital human modelling, Additive manufacturing, Eco-design, Systematic innovation; Intellectual Property Management; PDM/PLM systems to manage the product life-cycle applied in different industrial sectors, from Mechanics and Automotive to Textile-Clothing and Bio-engineering.

1.5 AWARDS & HONORS

Best Paper Award: Comotti Claudio, Regazzoni Daniele, Rizzi Caterina, Vitali Andrea (2016). Optimization Method for Additive Manufacturing: an Application in the Medical Field. In Proceedings of International Conference on Innovative Design and Manufacturing, ICIDM 2016, January 24-26, 2016, Auckland, New Zealand, USA.

KM Award: Best presentation at the 19th Workshop on “Infrastructure and application to manage and disseminate organizational knowledge”, Milan, Italy, 16 October 2014.

Innovact Prize: The project "Virtual Socket Design - VK Group, University of Bergamo" won the 3rd Prize (among 120 participants) at the Innovact - The European Forum for Innovative Start-Ups, Chambre de Commerce et d'Industrie de Reims et d'Épernay, March 2013.

2. PUBLICATIONS

2.1 SCIENTIFIC PUBLICATIONS

Caterina Rizzi has published more than 200 scientific publications; in particular more than 35 articles in ISI/Scopus scientific journals and more than 35 in proceedings of Scopus-indexed conferences (including ASME and ACM conferences) on the major research subjects. She has co-edited a book published by Springer, published 3 chapters in Springer books, and one published in the ASME ACIER Series. See also ResearchGate repository.

Relevant publications

1. Comotti C., Regazzoni D., **Rizzi C.**, Vitali A. (2016) Additive manufacturing to advance functional design: an application in the medical field. *Journal of Computing and Information Science In Engineering*, p. 1-45.
2. Colombo G., Facoetti G., **Rizzi C.**, Vitali A. (2015) Simplynurbs: a software library to model nurbs for medical applications. *Computer-Aided Design And Applications*, vol. 12, p. 794-802.
3. Serafini, M., Russo, D., **Rizzi, C.** (2015) Multi Criteria Material Selection for Eco-design, *Computer-Aided Design and Applications*, 12 (5), pp. 526-536.
4. Regazzoni, D., **Rizzi, C.**, (2015) Depth sensors along the design and validation of lower limb prosthesis, *Journal of Integrated Design and Process Science*, 19 (1), pp. 71-80.
5. Regazzoni D., De Vecchi G., **Rizzi C.** (2014) RGB cams vs RGB-D sensors: low cost motion capture technologies performances and limitations. *Journal Of Manufacturing Systems*, vol. 33, p. 719-728.
6. Russo, D., **Rizzi, C.** (2014) Structural optimization strategies to design green products, *Computers in Industry*, 65 (3), pp. 470-479.
7. Russo, D., **Rizzi, C.**, Montelisciani, G. (2014) Inventive guidelines for a TRIZ-based eco-design matrix, *Journal of Cleaner Production*, 76, pp. 95-105.
8. Colombo, G., Facoetti, G., **Rizzi, C.** (2013) A digital patient for computer-aided prosthesis design, *Interface Focus*, 3 (2).
9. Regazzoni, D., **Rizzi, C.** (2013) Digital Human Models and Virtual Ergonomics to Improve Maintainability, *Computer-Aided Design and Applications*, 11 (1), pp. 10-19.
10. Buzzi, M., Colombo, G., Facoetti, G., Gabbiadini, S., **Rizzi, C.** (2012). 3D modelling and knowledge: tools to automate prosthesis development process. *International Journal On Interactive Design And Manufacturing*, 6, p. 41-53.
11. Regazzoni, D., **Rizzi C.**, Nani R. (2011) A TRIZ-based approach to manage innovation and intellectual property. *International Journal of Technology Management*, 55, pp. 274-285.
12. Colombo, G, Filippi S, **Rizzi C.**, Rotini F. (2010) A new design paradigm for the development of custom-fit soft sockets for lower limb prostheses, *Computer in Industry*, 61(6), pp. 513-523.
13. M. Bertoni, M. Bordegoni, U. Cugini, D. Regazzoni, and C. **Rizzi**, (2009) PLM paradigm: How to lead BPR within the Product Development field, *Computers in Industry* 60, pp. 476-484.
14. G. Colombo, D. Pugliese, and C. **Rizzi**, (2008), Developing DA Applications in SMEs Industrial Context, *Computer Aided Innovation (CAI)*, WCC 2008, Ed. G. Cascini, Spriger, pp.69-82.
15. A. Carubelli, M. Fontana, C. **Rizzi**, U. Cugini, (2005) ClothAssembler: a CAD Module for Feature-based Garment Pattern Assembly, *Computer Aided Design and Applications*, 2(6), pp. 795-804.
16. Fontana, M., **Rizzi, C.**, Cugini, U., (2005) 3D Virtual Apparel Design for Industrial Applications, *Computer Aided Design*, Ed. Elsevier, 37, pp. 609-622.
17. Susca L., Mandorli F., **Rizzi C.**, U. Cugini, Racing Car Design using Knowledge-Aided Engineering, in *AIEDAM*, 14(3), June 2000, pp. 235-249.

3. TEACHING

3.1 COURSES TAUGHT

- 2002- Technical drawing, B.Sc., Faculty of Engineering (Mechanical Engineering, Textile Engineering), Università di Bergamo
- 2004 – **Methods and Tools for Product Life Cycle management**, Faculty of Engineering (Mechanical

- Eng., Management Eng. and Information Eng.), Università di Bergamo
- 2004- 2011 Virtual Prototyping**, M.Sc., Faculty Engineering (Mechanical Engineering, Computer Engineering), Università di Bergamo
- 2002- 2006 Virtual prototyping of products and Processes**, M.Sc., Faculty of Engineering (Mechanical Engineering), Università di Bergamo
- 2003-2005 Image processing for Design**, M.Sc., Faculty of Architecture (Industrial Design), Università di Parma
- 1995-2001 Computer Aided Design**, B.Sc. and M.Sc., Faculty of Engineering (Mechanical Engineering), Università di Parma
- 1992-1995 Technical drawings**, B.Sc., Faculty of Engineering (Chemical Engineering), Università di Napoli Federico II.

3.2 LABORATORIES

- 2003-** **Coordinator** of the PLM/V&K Laboratory, Department of Management, Information and Production Engineering.

4. SERVICES

4.1 NATIONAL/INTERNATIONAL SERVICE (2009 – TODAY)

Member of PhD boards

- **Member** of the academic board of the PhD programme in Economics and Management of Technology (**DREAMT**) jointly founded by University of Pavia and University of Bergamo (2013 -)
- Member of Board of Supervisors, PhD programme Doctoral School in Industrial Engineering - Chemical, Materials and Manufacturing Engineering coordinated by University of Padua (2006-2012).
- Member of various **national and international Boards of Examiner** of PhD students.

Member of steering and technical Committees

Nominated Chairperson of the ASME-CIE CAPPD (Computer Aided Product and Process Development) Technical Committee, 2014-2015.

Member of the Editorial Board of:

- CAD&A Journal, Francis & Taylor
- Journal of Computational Design and Engineering (JCDE)

Member of research project evaluation boards

- Appointed by the European Commission as evaluator of project proposals in FP7-PEOPLE-2009, FP7-PEOPLE-2010, FP7-PEOPLE-2011, FP7-PEOPLE-2012, FP7-PEOPLE-2013 Marie Curie Actions Calls.
- Appointed by the Regione Piemonte (Italy) as evaluator of industrial research proposals (2009).
- Appointed by Ministry of Education, Youth and Sports – EU Operational Programme Management Section, Czech Republic as evaluator project proposals (2010)
- Appointed by European Commission as an independent expert for monitoring FP7-ICT SMART VORTEX project (2011-2014).
- Appointed by the European Commission as evaluator of project proposals in Horizon 2020 MSCA Calls (October-November 2014 and October-November 2015).

4.2 DEPARTMENT/UNIVERSITY SERVICE (CURRENT)

- Sept 2014-** Head of the Department of Management, Information and Production, University of Bergamo
- Oct 2014-** Elected Member of the Academic Senate of the University of Bergamo.
- Sept 2016-** Member of the Technology Transfer Board at University of Bergamo.

4.3 CONFERENCE ORGANIZATIONS AND PARTICIPATION TO PROGRAM COMMITTEES (2010 – TODAY)

- **Conference Chair and Organizer** of the TRIZ Future Conference 2010, Bergamo, 3-5 November 2010.
- **Conference Co-chair and organizer** of the International CAD Conference and Exhibition 2013, Bergamo, 17-20 June 2013.
- **Program Chair** of the 12th ACM SIGGRAPH Virtual Reality Continuum and Its Applications in Industry, Hong Kong, November 17-19, 2013.
- **Program Chair** of the 2014 International Conference on Innovative Design and Manufacturing (ICIDM), Montreal, 13-15 August 2014.
- **Co-Organizer** of the CIE Engineering Applications of Brain Science & Human Models Symposium at ASME/IDETC CIE 2012, Chicago, 12-15 August 2012.
- **Co-Organiser** of the CIE CAPPD: Digital Human Modeling for Engineering Application Symposium at ASME/IDETC CIE 2013, Portland, 4-7 August 2013.
- **Organiser of CAPPD (Computer Aided Product and Process Development) Symposium and co-organiser of the CAPPD/AMS: Human Modeling: Methods and Applications in Engineering Symposium** at ASME/IDETC CIE 2015, Boston, 2-5 August 2015.
- **Chair of CAPPD (Computer Aided Product and Process Development) Symposium and co-chair of CAPPD/AMS: Human Modeling: Methods and Applications in Engineering Symposium** at ASME/IDETC CIE 2016, Charlotte, 22-24 August 2016.
- **Member of International Program Committee** of
 - ISC - Industrial Simulation Conferences – Track: Simulation in Industrial Design and product design, since 2008.
 - TMCE 2010, April 2010, Ancona, Italy.
- **Member of International Organizing Committee – Europe, CAD & Exhibition Conference, since 2014.**
- **Member of the Program Board** of the International Conferences on Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management, HCI International, **since 2015.**
- **Member of the Scientific Committee** of:
 - ICED 2015, Milan, 27-30 July, 2015.
 - MTD (Meaningful Design Technology, Guimaraes (Portugal) 20-21 July, 2017
- **Member of Advisory Board** of:
 - 8th IPSS CONFERENCE Product-Service Systems across Life Cycle, 20-21 June 2016, Bergamo (Italy)
 - 7th International Conference on Design Computing and Cognition (DCC'16) 27-29 June 2016, Northwestern University, Evanston (Chicago), USA.
- **Keynote speaker** at:
 - ICE Conference 2014, Bergamo, June 23-25 2014;
 - CAD 15 Conference, London, 22-25 June, 2015.
- **Invited Talk** at:
 - HCI 2015, Los Angeles, 2-7 August, 2015 “Ergonomic Assessments using Advanced Virtual Prototyping Technique” in the 6th International Conference on Digital Human Modeling and applications in Health, Safety, Ergonomics and Risk Management, Los Angeles;
 - ADCP 2015 Workshop, Hangzhou (China), 18-20 September 2015-10-08;
 - Plenary talk 2014 International Conference on Innovative Design and Manufacturing, Montreal, Canada, August 13-15, 2014;
 - ASME IDETC/ CIE 2014, Buffalo (USA) 17-20 August 2014, VES Panel, Low cost Motion Capture Systems for industrial and medical applications.

4.4 REVIEW SERVICE (2010 – TODAY)

- **Reviewer of articles for scientific journals:** CAD, Computer Aided Design & Applications, Applied Ontology, Co-Design, JRRD (Journal of Rehabilitation Research and Development), IEEE-Transactions on Biomedical Engineering, IEEE Transactions on Automation Science and Engineering, International

Journal of Product Development, European Journal of Social Sciences, International Journal of Management and Decision Making, IJCAT, Journal of Intelligent Manufacturing, IJIDeM, Journal of Manufacturing Systems, CIRP Journal of Manufacturing Science and Technology and Computers in Industry.

- papers reviews for TRIZ Future Conference, since 2006
- papers review for **ASME-IDETC**, since 2008
- papers review for **ASME/IMECE**, 2010, 2015
- papers review for Virtual Concept, 2010
- papers review for CAD&A, 2010, 2011, 2015, 2016
- papers review for ICED, 2013, 2015
- papers review for HCI International, 2014, 2015, 2016
- papers review for VRCAI, 2015
- papers review for TMCE, 2016
- papers review for ICDIM, 2016

4.5 OTHERS

- Member, ASME: MEMBERSHIP #: 100135965
- Founder and co-owner of BiGFLO spin-off (<http://www.bigflo.it>) whose aim is to develop software solutions to support companies during product and process innovation (2012-today).