

University Academic Curriculum Vitae

Personal information

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Education since leaving school

- 2005, M.Sc. degree in Mechanical Engineering, Università degli Studi di Firenze, Florence, Italy (hereinafter UNIFI). Title of the thesis: “TRIZ features: nuove funzionalità nei sistemi CAD di supporto alla progettazione concettuale” (*TRIZ features: new functions in CAD systems to support conceptual design*)
- 2006, Habilitation to the profession of Engineer, UNIFI
- 2014, PhD in Industrial Engineering, UNIFI. Title of the thesis: “A methodological toolkit to support innovation processes in industry”
- 2017, qualification for the functions of Associate Professor in the Competitive Sector 09/A3 “Industrial design, machine construction and metallurgy” according to Italian legislation (ASN II fascia). 5 out of 5 members of the Evaluation Commission voted in favor of granting the qualification. Details are to be found in the section “National Qualification – ASN”.
- 2021, qualification for the functions of Full Professor in the Competitive Sector 09/A3 “Industrial design, machine construction and metallurgy” according to Italian legislation (ASN I fascia). 5 out of 5 members of the Evaluation Commission voted in favor of granting the qualification. Details are to be found in the section “National Qualification – ASN”.

Present appointment

- Associate Professor in the Academic Discipline (SSD) ING-IND/15 “Design methods for industrial engineering” – Competitive Sector 09/A3
 - start of the present appointment: October 1st, 2022
 - Employer: Free University of Bozen|Bolzano (hereinafter UNIBZ), Bolzano (Italy), Faculty of Science and Technology (hereinafter FaST)
 - Brief description of responsibilities: Prof. Borgianni leads the research group around the SSD ING-IND/15 since his affiliation at UNIBZ. All the activities performed since 2015 have been conducted under his supervision as regards the contribution given by the mentioned SSD.

Previous professional experience

From / to	Name of academic Institution	Academic level
Mar 1 st , 2006 – Aug 31 st , 2007	UNIFI	University Grant
Sep 15 th , 2007 – Oct 31 th , 2008	UNIFI	University Grant
Nov 1 st , 2008 – Oct 31 st , 2012	UNIFI	Research Assistant
Nov 1 st , 2012 – Jan 6 th , 2015	UNIFI	Research Assistant
Jan 7 th , 2015 – Sep 30 th , 2022	UNIBZ	Assistant Professor (RTD)

During the period that can be referred to previous appointments at UNIFI (March 2006 – January 2015), dr. Borgianni has provided his research contribution in some funded projects, see below.

Name of the project	Acronym	Funds	Years of activity	Scientific Responsibility
Leather Innovation Network	LEATHERIN	DoCUP Tuscany Region	2006	Dr. Gaetano Cascini
Technology MechCluster	TMC	DoCUP Tuscany Region	2006	Dr. Gaetano Cascini
Just in Time for Shoes	JITS	DoCUP Tuscany Region	2007-2008	Dr. Gaetano Cascini
Innovation within the business process of camper vans	REICA	DoCUP Tuscany Region	2008-2009	Prof. Paolo Rissone
PATent LIBrary	PATLIB	Ministry of the Economic Development	2013-2014	Dr. Federico Rotini
ICT Solutions to support value innovation in the industrial processes of the footwear sector	ICT4SHOES	POR CReO FESR 2007-2013	2012-2014	Dr. Federico Rotini

During the period that can be referred to previous appointments at UNIFI (March 2006 – January 2015), dr. Borgianni has provided his research contribution in some research agreements, see below.

Name/topic of the agreement	Clients and beneficiaries	Years of activity	Scientific Responsibility
Increasing efficiency of coffee machines	Jolly Caffé Spa, I2T3 Onlus	2006	Dr. Gaetano Cascini
ICT Solutions to support production processes in the painting industry	SO.VER. srl	2007	Dr. Gaetano Cascini
Patent analysis of technical systems for the exploitation of renewable energy from geothermic sources	Consorzio per lo Sviluppo delle Aree Geotermiche della Toscana meridionale, Dr. Wolf srl	2008	Dr. Gaetano Cascini
Innovative methods to identify new fields of application for the polyurethane manufacturing technologies	RGS Europa	2009	Prof. Paolo Rissone
IT Tool to support SMEs in systematic innovation, based on a structured methodology and an open innovation paradigm	Dr. Wolf srl	2009-2011	Dr. Federico Rotini
Technology benchmark for the industrial fabric of the area Valdelsa Senese	PIN srl	2011	Dr. Federico Rotini
Patent search within engines for acoustic diffusors	B&C Speakers spa, Dr. Wolf srl	2011	Dr. Federico Rotini
Patent search within systems for active noise control	B&C Speakers spa, Dr. Wolf srl	2013	Dr. Federico Rotini
Study of innovative processes adopted by a pilot sample of Tuscan firms	PIN srl	2013	Dr. Federico Rotini
Patent analysis within the call Unioncamere 2014	ErreQuadro Srl	2014	Dr. Federico Rotini

During the period that can be referred to previous appointments at UNIFI (March 2006 – January 2015), dr. Borgianni has performed some professional activities for private and public institutions in the form of occasional professional services. The activities are summarized in the table below, which briefly includes the scope of the professional services.

Topic of the activity	Client	Years of activity
Application of creative methods to solving problems concerning grinding machines	Turbotecnica srl	2006
Investigation of diffused practices within Tuscan mechanical firms	CNA Toscana	2006
Supporting the development of a software application for the smart analysis of patent documents	Dr. Wolf srl	2009 & 2011
Investigation of the level of inventiveness of Tuscan firms by means of statistical considerations on patent activity	Alintec scarl	2009
Lectures and training in the field of Intellectual Property	Fondazione per la Ricerca e l'Innovazione (within UNIFI)	2014

Experience in academic teaching

- *Coursework*

Below are the courses in which Dr. Borgianni has been appointed as Teaching Assistant at UNIFI, Faculty (School) of Engineering.

Course Name	Language	Program	Appointee(s)	Academic Years
Methods and tools for product innovation	Italian	M.Sc. in Mechanical Engineering, Energy Engineering and Management Engineering	Dr. Gaetano Cascini	From 2005/06 to 2008/09
Knowledge Management and Intellectual Property	Italian	M.Sc. in Mechanical Engineering, Energy Engineering and Management Engineering	Dr. Gaetano Cascini	From 2005/06 to 2008/09
Development of engineering products	Italian	M.Sc. in Mechanical Engineering	Dr. Federico Rotini	From 2009/10 to 2014/15
Methods and tools for innovation	Italian	M.Sc. in Mechanical Engineering, Energy Engineering and Management Engineering	Dr. Gaetano Cascini, Dr. Federico Rotini, Prof. Paolo Rissone	From 2009/10 to 2013/14

The courses held at UNIBZ as lecturer are reported in the followings; they are subdivided according to the reference degree. For all the courses, the indication of satisfied students is reported. These figures are based on the number of positive answers (“Generally YES” and “Definitively YES”) to the corresponding question (“Are you generally satisfied with the course taught?”) in the evaluation surveys related to the three exam sessions following the course, for those students stating that they attended 50%+ of the classes. As for the percentages including the symbol “**”, these refer to courses where Prof. Borgianni had a coordination role, but more lecturers have held lectures: as separate evaluations are not available, the attribution of a satisfaction index might not be totally due to Prof. Borgianni’s performance. As evident, the Covid-19 has affected teaching methods. In the four tables that follow and include courses,

- the rows highlighted in grey indicate courses that have been held (almost) completely online;
- the rows highlighted in yellow indicate courses that have been held partially online only and partially in a hybrid (in class and contextually remotely) format;
- the rows highlighted in red indicate courses that have been held in a hybrid format.

Below are the courses in which Prof. Borgianni has been appointed as Lecturer at UNIBZ, FAST, for the B.Sc. in Industrial and Mechanical Engineering.

Course Name	Academic Year(s)	Language	ECTS	Hours taught	% satisfied students
Creativity in engineering design and inventive problem solving	2014/15	Italian	3	30/30	N/A
Technical drawing and industrial engineering methods	2015/16	Italian	8	78/78	89%
	2016/17	English	6	60/60	79%
	2017/18	English	6	60/60	100%
	2018/19	English	6	60/60	80%
	2019/20	English	6	60/60	81%
	2020/21	English	6	60/60	89%
	2021/22	English	6	30/60	100%
CAD Fundamentals	2018/19	English	3	12/30	93%*
	2019/20	English	3	12/30	100%*
	2020/21	English	3	30/30	100%
Reverse Engineering and Rapid Prototyping	2021/22	English	6	60/60	100%
	2022/23	English	6	60/60	N/A

Below are the courses in which Prof. Borgianni has been appointed as Lecturer at UNIBZ, FAST, for the Professional B.Sc. in Wood Engineering.

Course Name	Academic Year(s)	Language	ECTS	Hours taught	% satisfied students
Technical drawing and CAD	2018/19	English	6	42/60	83%*
	2019/20	English	6	42/60	70%*
	2021/22	English	6	6/66	86%

Below are the courses in which Prof. Borgianni has been appointed as Lecturer at UNIBZ, FAST, for the M.Sc. in Industrial Mechanical Engineering.

Course Name	Academic Year(s)	Language	ECTS	Hours taught	% satisfied students
	2016/17	English	5	26/48	N/A

Reverse Engineering and Rapid Prototyping	2017/18	English	5	48/48	100%
	2018/19	English	5	48/48	100%
	2019/20	English	5	48/48	85%
	2020/21	English	5	48/48	100%
Design and Manufacturing of Industrial Products: Module "Reverse Engineering and Rapid Prototyping"	2021/22	English	5	48/48	95%
	2022/23	English	5	48/48	N/A

Below are the courses held by Prof. Borgianni within the framework of lifelong learning program Studium Generale, UNIBZ.

Course Name	Language	Academic Year(s)	ECTS	Hours taught	% satisfied students
Creative thinking and safeguarding inventions	Italian	2016/17	5	30/30	100%
	Italian	2017/18	5	30/30	100%
	Italian	2018/19	6	36/36	100%
Creativity I: development of sustainable products	Italian	2020/21	3	18/18	N/A
	Italian	2021/22	3	18/18	100%
	Italian	2022/23	3	18/18	N/A
Creativity II: systematic innovation of products	Italian	2021/22	3	18/18	N/A
	Italian	2022/23	3	18/18	N/A

Because of some classes shared across different courses, the total number of taught hours does not correspond to the number of hours taught in each Academic Year, which is shown in the bullet list below. The lectures held for the program Studium Generale are not included here, as they do not contribute to the teaching load according to UNIBZ regulations.

- A.Y. 2014-15: 30 teaching hours, 3 ECTS (in this A.Y., dr. Borgianni belonged to UNIBZ academic staff for one semester only)
- A.Y. 2015-16: 78 teaching hours, 8 ECTS
- A.Y. 2016-17: 86 teaching hours, approximately 11.5 ECTS
- A.Y. 2017-18: 108 teaching hours, 11 ECTS
- A.Y. 2018-19: 120 teaching hours, 12 ECTS
- A.Y. 2019-20: 120 teaching hours, 12 ECTS
- A.Y. 2020-21: 138 teaching hours, 14 ECTS
- A.Y. 2021-22: 144 teaching hours, approximately 14.5 ECTS
- A.Y. 2022-23: 120 teaching hours, 12 ECTS.

- *Summary of significant personal achievements in teaching*

The topics dealt with in research and teaching have evolved over the last few years and have affected each other. This means that, contextually, newly appointed courses have given Prof. Borgianni the chance to expand his research horizons, and achievements in research have urged him to activate new courses or to change contents and syllabi.

The accumulated teaching experience and a number of circumstances have allowed Prof. Borgianni to test new teaching methods and techniques, such as:

- On-line and hybrid teaching
- Moodle platforms for e-learning
- Video-lectures and asynchronous teaching
- Flipped classroom modality for parts of courses
- Laboratory experiments and teaching excursions
- Industrial experts' online seminars
- Real-time in-class online surveys for verification and expression of opinions (e.g., through Mentimeter)
- Surveys following the conclusion of courses to express preferences for teaching methods concerning the provision of specific contents.

Successful experiences have led to implement these methods and techniques regularly in the held courses.

This has been favored by attendance of events focused on training. Indeed, over the years, Prof. Borgianni has attended a number of courses offered by UNIBZ to improve his teaching skills and methods, e.g. regarding the use of English for Academic Purposes, Academic English, the use of moodle platforms, best practices in students' evaluation. In addition, given the new circumstances imposed by the Covid-19 pandemic, Prof. Borgianni has attended the 6-hour course "Practices to make distance education more effective and interactive" (in Italian), March 2nd and 9th, 2021. The course has been offered by t2i (Trasferimento Tecnologico Innovazione – Sistema Camerale Veneto) within the project E-EDU4.0.

The development and update of contents and new teaching methods is also favored by Prof. Borgianni's research in engineering education, especially in field of Additive Manufacturing, see the contributions B44, B56 and A45 in the Publications section.

- *Supervision and tutorship*

Prof. Borgianni has so far supervised 4 PhD students (bullet 1 completed, bullets 2-4 in progress), who do/have done research to pursue the following objectives.

1. Fine-tuning of guidelines to design creative products characterized by improvements in both environmental sustainability and market attractiveness.
2. Development of an in-line system to check and measure surface defects of die-cast components through image processing (Industrial PhD for which funds have been acquired).
3. Assessment of the role of forms of representation in User Experience so to guide decision-making during designing and prototyping.
4. Development of a Machine Learning-based support system to select the appropriate (mix of) manufacturing technologies to produce parts of known geometries.

Prof. Borgianni has so far supervised or co-supervised

1. 11 students for their Master theses (1 ongoing), out of which 5 at UNIFI;
2. 7 students for their Bachelor theses (4 ongoing);

3. 9 students for their project works within the M.Sc. "Industrial Mechanical Engineering", UNIBZ (2 ongoing).

Prof. Borgianni has been tutor for 13 students' internships, out of which 2 spent abroad and supported by the Erasmus+ Traineeship program.

The B.Sc. in Industrial and Mechanical Engineering and the M.Sc. Industrial Mechanical Engineering degrees designate a personal tutor for all enrolled students. The scope is to monitor students' progress and catch possible general problems as regards the organization of the degrees or specific issues. Students are invited to have regular meetings after each exam session, but they can contact the tutor at any time in presence of particularly relevant problem. In this framework, Prof. Borgianni has served as tutor for more than 20 students.

- *Other teaching-related initiatives, seminars and training activities*

Alta Scuola Politecnica (ASP) is a multidisciplinary and international honor program created by Politecnico di Milano and Politecnico di Torino. It provides supplementary education contents to excellent M.Sc. students from all the faculties and schools of both Universities following an application and selection procedure. The ASP curriculum includes the participation in four bespoke one-week schools followed by a separate work to be evaluated. Dr. Borgianni has been awarded as an ASP contributor for the Spring School "Design Methods and Processes" in the years 2018-2020 with the following tasks:

- 2018, 2019: in-presence lecturer and tutor for the development of students' projects during the spring school; reviewer of the follow-up works
- 2020: reviewer of the follow-up works (the possible contribution of personnel not belonging to the organizing institutions has been gradually lowered following the Covid-19 pandemic).

Dr. Borgianni's involvement in the project E-EDU4.0 (see the section "Research and Scholarship") is an additional means to enhance teaching methods and update contents, especially in the engineering field. In this framework, Dr. Borgianni has held the following teaching/training activities.

- Fundamentals of 3D CAD (3 full days, January 15th, 23rd, 29th, 2020): participation of companies' representatives, high-school teachers, UNIBZ technical staff
- 3D scanning and printing: overview of 3D printing technologies (half day, January 30th, 2020): participation of companies' representatives and high-school teachers
- Tools for creative product development (one hour, October 27th, 2020): webinar reserved to high-school students.

Prof. Borgianni is team member of the project "Smart Enterprise Qualification Program", European Social Fund, grant FSE30771, Principal Investigator dr. Erwin Rauch. The project is aimed to introduce new and smart technologies to empower workforce in industry, Prof. Borgianni will hold lectures in the framework of this project.

Dr. Borgianni has held the 2-hour seminar „(breve) viaggio alla scoperta dell'eye-tracking“ (“a short journey do discover eye-tracking”, in Italian), for Technical High School students, TFO Max Valier Bolzano, 18 January 2019, in cooperation with dr. Lorenzo Maccioni.

Dr. Borgianni has held the 4-hour seminar „Introduzione agli strumenti biometrici nell'ingegneria e nella progettazione“ (“Introduction to biometric devices in engineering and design”, in Italian) for Master and PhD students, UNIFI, 21 June 2018, in cooperation with dr. Lorenzo Maccioni.

Dr. Borgianni has held the 3-hour seminar „Strumenti biometrici a supporto dello sviluppo del prodotto – l'eye tracking“ (“Biometric instruments to support product development – the eye tracking”, in Italian) for Master and PhD students, UNIFI, 25 November 2019, in cooperation with dr. Lorenzo Maccioni and dr. Aurora Berni.

Dr. Borgianni has held the lecture “Introduction to Additive Manufacturing” together with dr. Cristian Cappellini, UNIBZ, on March 10th, 2021 and March 17th, 2022 in the framework of International Week Industry 4.0 (EUCLIDES Network).

Other academic responsibilities

Prof. Borgianni is:

- Member of the PhD Committee “Advanced System Engineering” at FaST, UNIBZ, starting from November 2019; he was previously member of the PhD Committee “Sustainable Energy and Technologies” at FaST, UNIBZ, 2016-2019
- Member of the Evaluation Committee for the selection of participants of exchange programs (Erasmus+ and Bilateral Agreements) at FaST, UNIBZ since the Academic Year 2019/20. Since then he has also
 - played the role of Erasmus coordinator and responsible person for the preparation of Learning Agreements for the mobility of students enrolled in the B.Sc. in Industrial and Mechanical Engineering, the M.Sc. in Industrial Mechanical Engineering, and the M.Sc. in Energy Engineering; mobility includes Erasmus+, Bilateral Agreements, free movers and short mobility programs.
 - participated in the evaluation commissions for the admission to the Erasmus+ Traineeship program.
- Head of the laboratory “Mechanical Lab” at UNIBZ since January 2018.

Prof. Borgianni is/has been:

- RTD representative at FAST following election (June 2020 – June 2022)
- Referent lecturer (docente di riferimento) for the B.Sc. in Industrial and Mechanical Engineering and the Professional B.Sc. in Wood Engineering
- Member of the tutoring group of the B.Sc. in Industrial and Mechanical Engineering and the M.Sc. in Industrial Mechanical Engineering
- Member of commissions for the final exam in Industrial and Mechanical Engineering and the M.Sc. in Industrial Mechanical Engineering
- Member of the commission for the selection of contract lecturers and teaching assistants for the following subjects
 - Technical Drawing – CAD (Professional B.Sc. in Wood Engineering)
 - Product Design (Professional B.Sc. in Wood Engineering)

- Italian Specialized (Professional B.Sc. in Wood Engineering and B.Sc. in Industrial and Mechanical Engineering)
- CAD Fundamentals (B.Sc. in Industrial and Mechanical Engineering)
- Cost-effective Design (B.Sc. in Industrial and Mechanical Engineering)
- Reverse Engineering and Rapid Prototyping (B.Sc. in Industrial and Mechanical Engineering)
- Reverse Engineering and Rapid Prototyping (M.Sc. in Industrial Mechanical Engineering)
- Design with Composite Materials (M.Sc. in Industrial Mechanical Engineering).

Dr. Borgianni has been Reviewer of a PhD dissertation at the School of Engineering Science, Lappeenranta University of Technology, Finland. Final exam date: April 18th, 2019.

Dr. Borgianni has been member of the final exam commission evaluating a PhD dissertation in the PhD Program “Management, Production and Design”, Politecnico di Torino, Turin. Final exam date: February 10th, 2021.

Prof. Borgianni has been appointed as member of the final exam commission evaluating two PhD dissertations in the PhD Program “Sustainable Energies and Technologies”, UNIBZ. Scheduled final exam date: August 30th, 2022.

Dr. Borgianni has served as General Chair of the 21st ETRIA World Conference “TRIZ Future” 2021 (TFC21), Bolzano, Italy, 22-24 September 2021, preceded by the workshops’ day on 21 September 2021.

Dr. Borgianni has organized:

- the International Workshop “Co-creative design for successful innovation”, held at UNIBZ, June 13th-14th, 2017
- the seminar “Eye tracking and biometric systems: breaking into industrial engineering”, held at UNIBZ, December 7th, 2017, together with Dr. Erwin Rauch
- the lecture “Reverse Engineering for big volumes: time-of-flight and phase shift 3D scanners”, held by prof. Lapo Governi (UNIFI) on November 24th, 2016 – cycle “Series of Lectures” at FaST, UNIBZ
- the lecture “The journey towards circular economy: how can we reinvent sustainable value creation”, held by prof. Daniela Pigosso (Technical University of Denmark) on November 29th, 2018 – cycle “Series of Lectures” at FaST, UNIBZ
- the lecture “Achieving sustainability in companies: how to ensure the proper interplay between Design, Technology and Management”, held by prof. Ab Stevels (Delft University of Technology) on November 26th, 2019 – cycle “Series of Lectures” at FaST, UNIBZ.
- the lecture “Data and creativity: the chicken and the egg”, held by dr. Milene Guerrero Goncalves (Delft University of Technology) on December 14th, 2021 – cycle “Series of Lectures” at FaST, UNIBZ.

Dr. Borgianni has provided his contribution for the following scientific events:

- 20th International Conference on Engineering Design 2015 (ICED15), Milan, Italy, 27-30 July 2015, acting as helper for the presentation sessions
- ADM (Italian Association for Machine Designers) and SSD ING-IND/15 Workshop, Milan, Italy, 14-15 February 2017, acting as Moderator for the session “Methods for the Conceptual Design”
- ADM (Italian Association for Machine Designers) and SSD ING-IND/15 Workshop, pisa, Italy, 14-15 September 2017, acting as Moderator for the session “Industry 4.0”
- TRIZ Future Conference 2017, Lappeenranta, Finland, 4-6 October 2017, acting as chair of a podium session
- 6th International Conference on Sustainable Design and Manufacturing, Budapest, Hungary, 4-5 July 2019, being appointed as co-chair of the Invited session “Systematic Innovation Tools for Eco-Design: Products, Processes and Assessment Methods”
- 6th International Conference on Design Creativity (ICDC 2020), Oulu, Finland, 26-28 August 2020, being appointed as chair of the podium session “Applied Design Creativity”
- 7th International Conference on Sustainable Design and Manufacturing, online, 9-11 September 2020, being appointed as co-chair of the Invited session “Systematic Innovation Tools for Eco-Design: Products, Processes and Assessment Methods”
- 20th ETRIA World Conference TRIZ Future 2020 (TFC20), Cluj-Napoca, Romania, 14-16 October 2020, being appointed as chair of the podium session “TRIZ and System Engineering and Analysis”
- 23rd International Conference on Engineering Design (ICED21), Gothenburg, Sweden, 16-20 August 2021, being appointed as chair of the podium session “3D/4D Printing”
- 8th International Conference on Sustainable Design and Manufacturing, online, 16-17 September 2021, being appointed as chair of the session “Sustainable Design, Innovation and Services”

Dr. Borgianni has acted as co-chair for the following workshops:

- “New Research Topics in Design for Additive Manufacture” hosted by the Design Society’s Special Interest Group “Design for Additive Manufacturing” at the Design Conference 2018, Dubrovnik, Croatia, 21 May 2018
- “Neurophysiological Measures and Biometric Analyses in Design Research” at the Design Computing and Cognition ’18 Conference, Lecco, Italy, 1 July 2018
- “Collaboratively Pursuing a Research Roadmap for Sustainable Design Tools”, hosted by the Design Society’s Special Interest Group “Sustainable Design”, at the 23rd International Conference on Engineering Design (ICED21), Gothenburg, Sweden, 16 August 2021
- “Research-craftsmanship alliances for sustainability in South Tyrol: the Tiny FOP MOB as a case study” at the workshops’ day of the 21st ETRIA World Conference TRIZ Future 2021 (TFC21), Bolzano, Italy, 21 September 2021
- “Sustainable Design for Additive Manufacturing”, hosted by the Design Society’s Special Interest Groups “Design for Additive Manufacturing” and “Sustainable Design” at the Design Conference 2022, Dubrovnik, Croatia, 23 May 2022

Prof. Borgianni has so far supervised or co-supervised

- 5 Research Assistants (Assegnista di Ricerca);
- 4 Research collaborators (Co.co.pro., collaborazione occasionale in the Italian system)
- A post-doc researcher spending one year abroad at UNIBZ as guest.

Memberships

Prof. Borgianni is member of the following scientific bodies:

- Design Society, in which he is an active member in the Special Interest Groups “Sustainable Design” (where he is Co-chair), “Design for Additive Manufacturing” (where he belongs to the Steering Committee) and “Design Creativity”
- European TRIZ Association (ETRIA), where he is member of the Executive Board
- Associazione Nazionale Disegno e Metodi dell'Ingegneria Industriale (ADM), Italian national Association of Design methods for industrial engineering.

Prof. Borgianni is member of the Editorial Board of the International Journal of Design Creativity and Innovation, ISSN 2165-0349. He is member of the Editorial Board of the journal Sustainability, ISSN 2071-1050. He is member of the Outreach Committee of the Journal of Integrated Design & Process Science, ISSN 1092-0617

Prof. Borgianni has been Guest Editor for the following Special Issues.

- “Requirements in design processes: open issues, relevance and implications” in the journal Applied Sciences; other guest editors are Prof. Federico Rotini, Dr. Niccolò Becattini and Dr. Lorenzo Fiorineschi.
- “Design to Drive Behavior Change for Sustainability and Circular Economy” in the journal Sustainability; other guest editors are Prof. Daniela Pigosso, Dr. Jeremy Faludi, Dr. Yann Leroy, and Prof. Sophie Hallstedt
- “Years of Design Creativity research: What is Industry Aware of?” in the Journal of Engineering, Design and Technology; other guest editors are Prof. Federico Rotini, Dr. Lorenzo Maccioni and Dr. Lorenzo Fiorineschi.

Prof. Borgianni has served as reviewer for the following scientific journals (in alphabetic order):

- Applied Sciences;
- Artificial Intelligence in Engineering Design, Analysis and Manufacturing (AI EDAM);
- CIRP Journal of Manufacturing Science and Technology;
- Computer Aided Design and Applications;
- Computers and Industrial Engineering;
- Design Science;
- Design Studies;
- Digital Creativity;
- Electronic Journal of Business Research Methods;
- Intelligent Buildings International
- International Journal of Design Creativity and Innovation;
- International Journal of Human-Computer Studies;
- International Journal on Interactive Design and Manufacturing;

- International Journal of Product Development;
- International Journal of Production Research;
- International Journal of Services Technology and Management;
- Journal of Business Research;
- Journal of Cleaner Production;
- Journal of Engineering Design;
- Journal of Engineering, Design and Technology
- Journal of Integrated Design and Process Science;
- Journal of Systems Science and Systems Engineering;
- Production and Manufacturing Research;
- Research in Engineering Design;
- Sustainability;
- Sustainable Energy Technologies and Assessments;
- Sustainable Production and Consumption;
- Technovation;
- Total Quality Management & Business Excellence.

Dr. Borgianni has served as member of the commission for the selection of distinguished papers published in the Volume 9 (2021) of the International Journal of Design Creativity and Innovation.

Prof. Borgianni is/has been member of the scientific committee, reviewers' board or program committee of the following international conferences and events:

- International Conference on Engineering Design (ICED)
 - 20th edition, Milan, Italy, 27-30 July 2015
 - 21st edition, Vancouver, Canada, 21-25 August 2017
 - 22nd edition, Delft, The Netherlands, 5-8 August 2019
 - 23rd edition, Gothenburg, Sweden, 16-20 August 2021
- International Design Conference DESIGN
 - 15th edition, Dubrovnik, Croatia, 21-24 May 2018
 - 16th edition, Dubrovnik, Croatia, 26-29 October 2020
 - 17th edition, Dubrovnik, Croatia, 23-26 May 2022
- International Conference on Design Creativity (ICDC)
 - 5th edition, Bath, United Kingdom, 31 January – 2 February, 2018
 - 6th edition, Oulu, Finland, 28 – 28 August, 2020
- ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC-CIE)
 - ASME IDETC-CIE 2019, Anaheim, United States of America, 18-21 August 2019
 - ASME IDETC-CIE 2020, St. Louis, United States of America, 16-19 August 2020
 - ASME IDETC-CIE 2021, online, 17-19 August 2021
 - ASME IDETC-CIE 2022, St. Louis, United States of America, 14-17 August 2022
- International Conference on Research Into Design (ICoRD)
 - 7th edition, Bangalore, India, 9-11 January 2019
 - 8th edition, Bombay, India, 7-9 January 2021
 - 9th edition, Bangalore, India, 9-11 January 2023
- International Conference on Axiomatic Design (ICAD)
 - 9th edition, Florence, Italy, 16-18 September 2015

- 10th edition, Xi An, People's Republic of China, 21-23 September 2016
- KES International Conference on Sustainable Design and Manufacturing (KES-SDM)
 - 3rd edition, Chania, Greece, 4-6 April 2016
 - 4th edition, Bologna, Italy, 26-28 April 2017
 - 6th edition, Budapest, Hungary, 4-5 July 2019
 - 7th edition, online, 9-11 September 2020
 - 8th edition, online, 16-17 September 2021
- ETRIA World Conference "TRIZ Future" (TFC)
 - 18th edition, Strasbourg, France, 29-31 October 2018
 - 19th edition, Marrakech, Morocco, 9-11 October 2019
 - 20th edition, Cluj-Napoca, Romania, 14-16 October 2020
 - 21st edition, Bolzano, Italy, 22-24 September 2021
 - 22nd edition, Warsaw, Poland, 27-29 September 2022
- International Joint Conference on Mechanics, Design Engineering & Advanced Manufacturing (JCM)
 - JCM2016, Catania, Italy, 14-16 September 2016
 - JCM2020, Aix-en-Provence, France, 2-4 June 2020
 - JCM2022, Ischia, Italy, 1-3 June 2022
- ADM International Conference
 - 2019 edition, Modena, Italy 9-10 September 2019
 - 2021 edition, Rome, Italy, 9-10 September 2021
- ASME International Mechanical Engineering Congress and Exposition
 - 2019 edition, Salt Lake City, United States of America, 11-14 November 2019
 - 2021 edition, online, 1-5 November 2021
- International Conference on Design Computing and Cognition
 - 8th edition, Lecco, Italy, 2-4 July 2018
 - 10th edition, Glasgow, United Kingdom, 4-6 July 2022
- 18th IIF Workshop "Forecasting New Products and Services: Research and Applications", Milan, Italy, 12-13 May 2016
- 27th International Conference on Flexible Automation and Intelligent Manufacturing, Modena, Italy, 27-30 June 2017
- The 25th International Conference on Transdisciplinary Engineering, Modena, Italy, 3-6 July 2018
- Design Science Research (DSR) 2018 Workshop on Data Driven Design and Learning, Montreal, Canada, 23-25 August 2018
- 30th Ingeggraf International Conference on GRAPHICS ENGINEERING, Valencia, Spain, 24-25 June 2021
- 2021 Biannual Conference of the Italian SIGCHI Chapter (CHIItaly 2021), Bolzano, Italy, 11-13 July 2021.

Prof. Borgianni belongs to the following reviewers' boards for projects and ministry-level evaluation procedures.

- REPRISSE register, board of scientific experts at the Italian Ministry for University and Research; section: Base Research; ERC sectors: PE8_10 - Industrial design (product design, ergonomics, man-machine interfaces, etc.) & PE8_7 - Mechanical and manufacturing engineering (shaping, mounting, joining, separation); SSD ING-IND/15.
- Register of VQR 2015-2019 reviewers; ERC sectors: PE8_10 - Industrial design (product design, ergonomics, man-machine

interfaces, etc.) & PE8_11 - Sustainable design (for recycling, for environment, eco-design); SSD ING-IND/15.

Research and scholarship

Consistently with his reference SSD, Prof. Borgianni carries out studies in the broad field of engineering design.

His main current research topics include:

- Theory of Inventive Problem Solving (TRIZ) and inventive design
- Design creativity
- Early design phases and idea generation
- Eco-design, design for sustainability and the Circular Economy
- Design and sustainability assessment for the building industry
- Human behavior in design, human-product interaction and User Experience
- Experimental design with biometric measures and Virtual Reality
- Reverse Engineering and inspection
- Design for Additive Manufacturing
- Quality in Rapid Prototyping
- Decision-making to support manufacturing choices out of designed products
- Engineering design education.

In the previous five years, dr. Borgianni has also dealt with.

- Value-oriented design of products and industrial processes
- Forecasting-based decision-making techniques for product innovation
- Intellectual property
- Conceptual design with CAD, Computer-Aided Innovation.

The main achievements in the last few years can be summarized in the followings.

- Structuring of the body of knowledge of TRIZ based on the most impacting literature contributions.
- Identification of deterministic relations between problems and solutions in the context of TRIZ.
- Evidence of the relevance of sources and inspiration and their forms of representation in the ideation of new attributes for engineering products.
- Establishing the basis for “design for surprise”
- Identification of the main relations between sustainability, success, and value in design so that newly developed green products can have more chances to thrive in the market.
- Proposal of a new system to assess Circular Economy for industrial companies and their products based on a systematic review of existing metrics.
- Preliminary development of a checklist to consider people’s unsustainable behavior in product design.
- Evidence of the relevance of forms of representations for new designs in relation to product affordances.

- Identification of the knowledge gaps that hinder preference of green products over less sustainable alternatives
- Mapping of the use of biometric measures and eye-tracking in engineering and product design
- Establishment of systems to make eye-tracking experiments in product design and representation more repeatable
- Assessment of the perceived pros and cons of products fabricated with cheap Additive Manufacturing technologies
- Assessment of the current provision of University education in Design for Additive Manufacturing.
- project applications, organization of scientific events, launch of special issues, co-supervision activities, initiatives and management within scientific societies.

Research grants and contracts are shown in the table below

Period	Award Holder(s)	Funding Body	Title	Amount received
01/07/2015 – 31/12/2017	Dr. Yuri Borgianni	FaST, UNIBZ, RTD call 2015	ChANging design requirements – aCquiring knowledge from ApplicatioNs of attractive quality theory (CAN-CAN)	€4500,00
01/12/2015 – 31/12/2017	Dr. Cinzia Battistella (Principal Investigator until 11/05/2016); Dr. Yuri Borgianni (member of the research team until 11/05/2016; Principal Investigator since 12/05/2016); other members of the research team	UNIBZ, RTD call 2015	Product-service system oriented business models: a sustainable application into sustainable companies (PROSECCO)	€8000,00
01/07/2016 – 31/12/2017	Dr. Yuri Borgianni (Principal Investigator); other members of the research team	UNIBZ, RTD call 2015	STimulating And oRganizing The develOpment of crEative iDeas (STARTLED)	€16200,00
01/11/2016 – 31/10/2020	Dr. Pasquale Russo Spena (Principal Investigator until 31/12/2018); Dr. Guido Orzes (Principal Investigator since 01/01/2019); Dr. Yuri Borgianni (Co-Investigator) ; other members of the research team	UNIBZ, CRC call 2016	"Additive Manufacturing FDM: Dimensional Accuracy and Product Acceptability" (AMDAPA)	€45000,00
01/11/2017 – 31/01/2021	Dr. Erwin Rauch (Principal Investigator); Dr. Yuri Borgianni (Co-Investigator until 28/02/2019; Principal Investigator since 01/03/2019); other members of the research team	UNIBZ, CRC call 2017	Industrial Usability of Eye Tracking for Manufacturing and Design in SMEs (EYE-TRACK)	€63000,00

01/05/2018 – 30/04/2021	Prof. Dominik Matt (Principal Investigator for UNIBZ); Dr. Yuri Borgianni (team member); other team members	European Regional Development Fund (ERDF) - Interreg Italy- Austria. Grant ITAT3018	E-EDU 4.0 - Engineering Education 4.0	€180072 (UNIBZ)
01/07/2019 – 30/06/2021	Dr. Yuri Borgianni (Principal Investigator); other members of the research team	UNIBZ, RTD call 2019	fine-tuning new and smart ECO- design guidelines (few sECONds)	€9418,92
24/09/2020 - 30/06/2022	Dr. Yuri Borgianni (Principal Investigator); Prof. Guido Orzes (Co- Investigator)	European Regional Development Fund (ERDF) – Autonomous Province of Bolzano. Grant FESR1161	Tiny FOP MOB - Real world laboratory for ecological experimentation of the future building sector (TinyFOP)	€ 96044,52 (UNIBZ)

Dr. Borgianni has led the process towards the agreement with the company Alupress AG, Brixen, to fund an Industrial Doctorate position for the 36th PhD cycle, “Advanced-Systems Engineering” program. In addition, the fees paid by private sector participants in the training activities of the E-EDU4.0 projects have generated earnings.

Prof. Borgianni has participated as UNIBZ Principal Investigator and Co-investigator in many unfunded and positively evaluated project applications within the following programs/calls.

- Marie Skłodowska-Curie Actions (international)
- Interreg Central Europe
- Joint projects Germany-South Tyrol
- EUREGIO Science Fund (South Tyrol, Trentino, Tyrol)
- South Tyrol 4th call for Research (with partners from Tyrol)
- PRIN (national level); here, an application is also being evaluated
- Internal UNIBZ funding initiatives (Interdisciplinary calls, CRC).

Publications

Authored and edited Books

L1 Rotini F., Borgianni Y., Cascini G.: “Re-engineering of Products and Processes - How to achieve global success in the changing marketplace”, Springer, London, United Kingdom, 2012.

L2 Borgianni Y., Brad S., Cavallucci D., Livotov P. (eds.): “Creative Solutions for a Sustainable Development” – Proceedings of the 21st International TRIZ Future Conference, TFC 2021, Bolzano, Italy, September 22–24, 2021. IFIP Advances in Information and Communication Technology, Springer Nature. ISSN 1868-4238; ISSN 1868-422X (electronic). DOI: 10.1007/978-3-030-86614-3.

International Journals

A1 Borgianni Y., Cascini G., Rotini F.: “Process Value Analysis for Business Process Re-engineering”, Proceedings of IMechE, Part B:

Journal of Engineering Manufacture, 224(2), 2010, pp. 305-327. DOI: 10.1243/09544054JEM1460.

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A3 Becattini N., Borgianni Y., Cascini G., Rotini F.: "Model and Algorithm for Computer-Aided Inventive Problem Analysis", Computer-Aided Design, 44(10), 2012, pp. 961-986. DOI: 10.1016/j.cad.2011.02.013.

A4 Borgianni Y., Cascini G., Rotini F.: "Investigating the patterns of value-oriented innovations in Blue Ocean Strategy™", International Journal of Innovation Science, 4(3), 2012, pp. 123-142. DOI: 10.1260/1757-2223.4.3.123.

A5 Borgianni Y., Rotini F.: "Innovation Trajectories within the Support of Decisions: Insights about S-Curve and Dominant Design Models", International Journal of Innovation Science, 4(4), 2012, pp. 259-267. DOI: 10.1260/1757-2223.4.4.259.

A6 Becattini N., Borgianni Y., Cascini G., Rotini F.: "A TRIZ-based CAI Framework to guide Engineering Students towards a Broad-spectrum Investigation of Inventive Technical Problems", International Journal of Engineering Education, 29(2), 2013, pp. 318-333.

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A8 Borgianni Y., Cascini G., Pucillo, F., Rotini F.: "Supporting product design by anticipating the success chances of new value profiles", Computers in Industry, 64(4), 2013, pp. 421-435. DOI: 10.1016/j.compind.2013.02.004.

A9 Borgianni Y., Cascini G., Rotini F.: "Assessing creativity of design projects: criteria for the service engineering field", International Journal of Design Creativity and Innovation, 1(3), 2013, pp. 131-159. DOI: 10.1080/21650349.2013.806029

A10 Becattini N., Borgianni Y., Cascini G., Rotini F.: "Question/answer techniques within CAD environments: an investigation about the most effective interfaces", Computer-Aided Design and Applications, 10(6), 2013, pp. 905-917. DOI: 10.3722/cadaps.2013.905-917.

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A12 Borgianni Y., Cascini G., Rotini F.: "Business Process Reengineering driven by customer value: a support for undertaking decisions under uncertainty conditions", Computers in Industry, 68, 2015, pp. 132-147. DOI: 10.1016/j.compind.2015.01.001.

A13 Borgianni Y., Rotini F.: "Predicting the competitive advantage of design projects to dynamically support decisions in product development",

International Journal of Product Development, 20(15), 2015, pp. 355-381. DOI: 10.1504/IJPD.2015.073066.

A14 Bacciotti D., Borgianni Y., Rotini F.: "An original design approach for stimulating the ideation of new product features", Computers in Industry, 75, 2016, pp. 80-100. DOI: 10.1016/j.compind.2015.06.004.

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A19 Borgianni Y.: "Verifying dynamic Kano's model to support new product/service development", Journal of Industrial Engineering and Management, 11(3), 2018, 569-587. DOI: 10.3926/jiem.2591.

A20 Annarelli A., Battistella C., Borgianni Y., Nonino F.: "Estimating the value of servitization: a non-monetary method based on forecasted competitive advantage", Journal of Cleaner Production, 200, 2018, 74-85. DOI: 10.1016/j.jclepro.2018.07.220

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Tools and Applications, 78(23), 2019, 32779–32804. DOI: 10.1007/s11042-019-07950-1

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A27 Borgianni Y., Maccioni L.: “Review of the use of neurophysiological and biometric measures in experimental design research”, AI EDAM, 34(2), 2020, pp. 248-285. DOI: 10.1017/S0890060420000062

A28 Berni A., Maccioni L., Borgianni Y.: “Observing Pictures and Videos of Creative Products: An Eye Tracking Study”, Applied Sciences, 10(4), 2020, 1480. DOI: 10.3390/app10041480

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A36 Sacco P., Vinante C., Borgianni Y., Orzes G.: “Circular Economy at the Firm Level: A New Tool for Assessing Maturity and Circularity”, Sustainability, 13, 2021, 5288. DOI:10.3390/su13095288

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- A42 Nezzi C., Ruiz-Pastor L., Altavilla S., Berni A., Borgianni Y.: "How Sustainability-Related Information Affects the Evaluation of Designs: A Case Study of a Locally Manufactured Mobile Tiny House", *Designs*, 6(3), 2022, 57. DOI: 10.3390/designs6030057
- A43 Borgianni Y., Maccioni L., Dignös A., Basso D.: "A Framework to Evaluate Areas of Interest for Sustainable Products and Designs", *Sustainability*, 14(13), 2022, 7391. DOI: 10.3390/su14137931
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- A45 Borgianni Y., Pradel P., Berni A., Obi M., Bibb R.: "An investigation into the current state of education in Design for Additive Manufacturing", *Journal of Engineering Design*, 33(7), 2022, pp. 461-490. DOI: 10.1080/09544828.2022.2102893.
- A46 Cappellini C., Borgianni Y., Maccioni L., Nezzi C.: "The effect of process parameters on geometric deviations in 3D Printing with Fused Deposition Modelling", *International Journal of Advanced Manufacturing Technology*, 122, 2022, pp. 1763-1803. DOI: 10.1007/s00170-022-09924-4
- A47 Rotini F., Becattini N., Borgianni Y., Fiorineschi L.: "Editorial for the Special Issue "Requirements in Design Processes: Open Issues, Relevance and Implications"", *Applied Sciences*, 12(19), 2022, 10109. DOI: 10.3390/app121910109

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- B2 Borgianni Y., Cardillo A., Cascini G., Rotini F.: "Systematizing new value proposition through a TRIZ-based classification of functional features", *Proceedings of the 10th ETRIA TRIZ Future Conference* (sponsored by CIRP), Bergamo, Italy, November 3rd-5th, 2010;

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B4 Becattini N., Borgianni Y., Cascini G., Rotini F.: "Computer-Aided Problem Solving - Part 1: Objectives, Approaches, Identification of System Requirements", Proceedings of the 4th IFIP Working Conference on Computer-Aided Innovation, Strasbourg, France, June 30th-July 1st, 2011. DOI: 10.1007/978-3-642-22182-8_10

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B33 Borgianni Y., Hatcher G.: "Similarities and differences between humorous and surprising products", *21st International Conference on Engineering Design (ICED17)*, Vancouver, Canada, August 21st-25th, 2017.

B34 Borgianni Y.: "A framework of forecasting techniques as a checklist to minimize the likelihood of product design failures", *17th ETRIA TRIZ Future Conference*, Lappeenranta, Finland, October 4th-6th, 2017.

B35 Borgianni Y., Frillici F.S., Rotini F.: "How problems are solved in TRIZ literature: the need for alternative techniques to individuate the most suitable Inventive Principles", *17th ETRIA TRIZ Future Conference*, Lappeenranta, Finland, October 4th-6th, 2017.

B36 Borgianni Y., Lenarduzzi V., Rotini F., Taibi D.: "Bringing stimulated ideation in a web environment: students' evaluations of a basic software release", Fifth International Conference on Design Creativity, Bath, United Kingdom, January 31st – February 2nd, 2018.

B37 Maccioni L., Borgianni Y.: "A product success scale for supporting research in engineering design", 15th International Design Conference DESIGN 2018, Dubrovnik, Croatia, May 21st-24th, 2018

B38 Wallisch A., Maccioni L., Trautmann L., Ostermeyer E., Borgianni Y., Borg J.C.: "Lessons learnt in designing transportation solutions for elderly people following a participatory approach", 15th International Design Conference DESIGN 2018, Dubrovnik, Croatia, May 21st-24th, 2018

B39 Borgianni Y., Maccioni L., Rauch E.: "How does product design benefit from eye tracking and biometric systems? An overview on use objectives", Eighth International Conference on Design Computing and Cognition (DCC18), Lecco, Italy, July 2nd-4th, 2018

B40 Borgianni Y., Rauch E., Maccioni L., Mark B.G.: "User Experience Analysis in Industry 4.0 - the Use of Biometric Devices in Engineering Design and Manufacturing", IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), Bangkok, Thailand, December 16th-19th, 2018.

B41 Borgianni Y., Maccioni L., Rauch E.: "Using Virtual Reality to match the appearance of technical installations with landscapes", Human Behaviour in Design Conference, Tutzing, Germany, April 23th-24th, 2019

B42 Maccioni L., Borgianni Y.: "Eco-Design and Sustainable Development: A Speculation About the Need for New Tools and Knowledge", SDM: International Conference on Sustainable Design and Manufacturing (SDM19), Budapest, Hungary, July 4th-5th, 2019. DOI: 10.1007/978-981-13-9271-9_15

B43 Borgianni Y., Maccioni L., Pigosso D.: "Environmental Lifecycle Hotspots and the Implementation of Eco-design Principles: Does Consistency Pay off?", SDM: International Conference on Sustainable Design and Manufacturing (SDM19), Budapest, Hungary, July 4th-5th, 2019. DOI: 10.1007/978-981-13-9271-9_16

B44 Borgianni Y., Maccioni L., Russo Spina P., Shunmugavel M.K.: "University Education in Additive Manufacturing and the Need to Boost Design Aspects", 22nd International Conference on Engineering Design (ICED19), Delft, The Netherlands, August 5th-8th, 2019. DOI: 10.1017/dsi.2019.67

B45 Borgianni Y., Maccioni L., Orzes G., Basso D.: "How do design changes and the perception of product creativity affect value?". ADM2019 International Conference, Modena, Italy, September 9th-10th, 2019. Republished in Lecture Notes in Mechanical Engineering. Springer, Cham. DOI: 10.1007/978-3-030-31154-4_51

B46 Maccioni L., Borgianni Y.: "Investigating the value perception of specific TRIZ solutions aimed to reduce product's environmental impact", 19th ETRIA World TRIZ Future Conference, Marrakesh, Morocco, October 9th-11th, 2019. DOI: 10.1007/978-3-030-32497-1_23

B47 Maccioni L., Rampazzo E., Nalli F., Borgianni Y., Concli F.: "Low-Cycle-Fatigue Properties of a 17-4 PH Stainless Steel Manufactured via

Selective Laser Melting”, International Conference on Materials and Manufacturing Technologies, Bangkok, Thailand, 24-26 April 2020; republished on Key Engineering Materials, 2021, 877, 55-60. DOI: 10.4028/www.scientific.net/KEM.877.55.

B48 Maccioni L., Fraccaroli L., Borgianni Y., Concli F.: “High-Cycle-Fatigue Characterization of an Additive Manufacturing 17-4 PH Stainless Steel”, International Conference on Materials and Manufacturing Technologies, Bangkok, Thailand, 24-26 April 2020; republished on Key Engineering Materials, , 2021, 877, 49-54. DOI: 10.4028/www.scientific.net/KEM.877.49.

B49 Maccioni L., Borgianni Y.: “Success-oriented eco-ideation sessions: lessons learnt from the use of ten eco-design guidelines”, The Sixth International Conference on Design Creativity (ICDC2020), Oulu, Finland, 26-28 August 2020. DOI: 10.35199/ICDC.2020.16

B50 Maccioni L., Borgianni Y.: “Bringing success and value in sustainable product development: the eco-design guidelines”, 7th International Conference on Sustainable Design and Manufacturing (KES-SDM), Split, Croatia, 9-11 September 2020. DOI: 10.1007/978-981-15-8131-1_1.

B51 Maccioni L., Borgianni Y., Pigosso D., McAlloone T.: “Are eco-design strategies implemented in products? A study on the agreement level of independent observers”, 16th International Design Conference DESIGN 2020, Dubrovnik, Croatia, 26-29 October 2020. DOI: 0.1080/21681015.2016.1172124

B52 Berni A., Maccioni L., Borgianni Y.: “An eye-tracking supported investigation into the role of forms of representation on design evaluations and affordances of original product features”, 16th International Design Conference DESIGN 2020, Dubrovnik, Croatia, 26-29 October 2020. DOI: 10.1017/dsd.2020.296

B53 Maccioni L., Borgianni Y., Concli F.: “High Power Density Speed Reducers: A TRIZ Based Classification of Mechanical Solutions”, 20th ETRIA TRIZ Future Conference, Cluj-Napoca, Romania, 14-16 October 2020. DOI: 10.1007/978-3-030-61295-5_20

B54 Berni A., Borgianni Y.: “From the Definition of User Experience to a Framework to Classify its Applications in Design”, 23rd International Conference on Engineering Design (ICED21), Gothenburg, Sweden, August 16th-20th, 2021. DOI: 10.1017/pds.2021.424

B55 Hashemi-Farzaneh H., Borgianni Y., Forti D., Rauch E.: “A Speculation on the. Potential Support of Bio-Inspired Design to Biologicalisation in Manufacturing”, 23rd International Conference on Engineering Design (ICED21), Gothenburg, Sweden, August 16th-20th, 2021. DOI: 10.1017/pds.2021.23

B56 Berni A., Borgianni Y., Obi M., Pradel P., Bibbs R.: “Investigating perceived meanings and scopes of Design for Additive Manufacturing”, 23rd International Conference on Engineering Design (ICED21), Gothenburg, Sweden, August 16th-20th, 2021. DOI: 10.1017/pds.2021.455

B57 Berni A., Borgianni Y.: “User Experience Design in Software and Hardware Components studied in Human-Computer Interaction”,

ADM2021 International Conference, Rome, Italy, September 9th-10th, 2021.

B58 Berni A., Dallago F., Maccioni L., Concli F., Borgianni Y.: "The Role of Rapid Prototyping Devices in the Design and Manufacturing Practices of FabLab Visitors: a Survey", ADM2021 International Conference, Rome, Italy, September 9th-10th, 2021.

B59 Maccioni L., Borgianni Y.: "An ideality-based map to describe sustainable design initiatives", 21st ETRIA World Conference "TRIZ Future" 2021, Bolzano, Italy, September 22nd-24th, 2021.

B60 Cavaliere G., Borgianni Y., Schäfer C.: "Study of an In-line automated system for surface defects analysis on die-cast components by using Artificial Intelligence", 21st ETRIA World Conference "TRIZ Future" 2021, Bolzano, Italy, September 22nd-24th, 2021 (extended and republished as A40).

B61 Basso D., Borgianni Y.: "The design of product's packaging: different perception from different perspectives", International and Interdisciplinary Conference on Images and Imagination (IMG2021), Milan, Italy, November 25th-26th, 2021

B62 Berni A., Altavilla S., Ruiz-Pastor L., Nezzi C., Borgianni Y.: "An Eye-Tracking study to identify the most observed features in a physical prototype of a tiny house", 17th International Design Conference DESIGN 2022, Dubrovnik, Croatia, May 23th-26th 2022. DOI: 10.1017/pds.2022.86

B63 Ruiz-Pastor L., Altavilla S., Nezzi C., Borgianni Y., Orzes G.: "Life cycle assessment of a mobile tiny house made with sustainable materials and design implications", International Joint Conference on Mechanics, Design Engineering and Advanced Manufacturing (JCM 2022), Ischia, Italy, June 1st-3rd 2022.

B64 Berni A., Nezzi C., Ruiz-Pastor L., Altavilla S., Kofler I., Borgianni Y.: "Exploring people's visual perception and its impact on evaluation of a tiny house prototype using eye tracking technology", International Joint Conference on Mechanics, Design Engineering and Advanced Manufacturing (JCM 2022), Ischia, Italy, June 1st-3rd 2022.

B65 Cavaliere G., Borgianni Y., Rampone E.: "Development of a system for the analysis of surface defects in die-cast components using Machine Vision", 1st International Symposium on Industrial Engineering and Automation, Bolzano, Italy, June 21st-22nd, 2022

B66 Örddek B., Borgianni Y., Coatanea E.: "Classification framework for Machine Learning support in manufacturing", 1st International Symposium on Industrial Engineering and Automation, Bolzano, Italy, June 21st-22nd, 2022

International Conferences – abstracts and posters

C1 Scuttari A., Borgianni Y., Kofler I., Maccioni L.: "Mobile Eye Tracking (MET) in real-world setting: exploring visual attention of visitors in accommodation facilities", Consumer Behavior in Tourism Symposium 2019, Bruneck, Italy, 11-14 December 2019

C2 Borgianni Y.: "Getting 3D-prints ready for end products", 12th International Conference on Materials and Manufacturing Technologies (ICMMT 2021), Singapore, 23-26 April 2021. Invited contribution

C3 Cavaliere G., Borgianni Y., Schäfer C.: "Study of an automated system for surface defects analysis on die-cast components by using Artificial Intelligence", HTDC – High Tech Die Casting International Conference, Vicenza, Italy, 23-25 June 2021

C4 Nezzi C., Altavilla S., Ruiz-Pastor L., Borgianni Y., Orzes G.: "Improving sustainability in the construction sector: an LCA comparison in the Italian context", 12th EDSI (European Decision Sciences Institute) Annual Meeting, Dublin, Ireland, May 29th – June 1st, 2022

C5 Mohammadi A., Yang J., Borgianni Y., Zeng Y.: "Analysis of TRIZ using TASKS Framework", Tenth International Conference of Design Computing and Cognition (DCC22), Glasgow, United Kingdom, July 4th-6th 2022

International Workshops

W1 Becattini N., Borgianni Y., Cascini G., Rotini F.: "Computer-Aided Problem Solving: a dialogue-based system to support the analysis of inventive problems", Sixth TRIZ Symposium in Japan, Kanagawa I. T., Japan, September 9th-11th, 2010.

W2 Borgianni Y., "Assessing the influence of time in transforming customer preferences according to Kano's theory of attractive quality", 18th IIF Workshop "Forecasting New Products and Services: Research and Applications", Milan, Italy, May 12th – 13th, 2016

W3 Annarelli A., Battistella C., Borgianni Y., "Service Added Value Estimate: an original tool for forecasting the value of Product Service Systems", 18th IIF Workshop "Forecasting New Products and Services: Research and Applications", Milan, Italy, May 12th – 13th, 2016

National Workshops (Italy)

W4 Maccioni L., Borgianni Y.: "La sostenibilità come elemento fondamentale di valore nelle fasi preliminari della progettazione" (Sustainability as a fundamental value driver in the early design phases, in Italian), ADM Workshop, Milan, Italy, February 14th-15th, 2017.

W5 Borgianni Y.: "Industria 4.0 nell'immaginario degli studenti di ingegneria (e non solo): quanto pesa nel pensiero creativo" (Industry 4.0 in the imagination of engineering students (and not only): which role it plays within creative thinking, in Italian), ADM Workshop, pisa, Italy, September 14th-15th, 2017.

W6 Maccioni L., Borgianni Y.: "Il successo della progettazione sostenibile: una questione di principio?", (Success in sustainable design: a matter of principle?, in Italian), ADM Workshop, Turin, Italy, February 1st-2nd, 2018

W7 Borgianni Y., Maccioni L.: "Le attività del gruppo ING-IND/15 alla Libera Università di Bolzano", (The activities of the research group belonging to the ING-IND/15 sector at the Free University of Bozen-Bolzano, in Italian), ADM Workshop, Turin, Italy, February 1st-2nd, 2018

Newspaper articles and media

N1 Rauch E., Borgianni Y., Matt D.T., "Im Auge des Betrachters" (In the eyes of the observer, in German), Südtiroler Wirtschaftszeitung, 12/01/2018

Publications about the applicant, press releases and other divulgations

The website of the North-West Croatia Regional Energy Agency acknowledges dr. Borgianni's relevant contribution provided through his lecture on patent procedures, held in Zagreb on November 26th, 2014, in the framework of the project SMARTinMED (transnational cooperation Programme MED, funded by the European Union's Regional Development Fund). The link follows (in Croatian):

<http://www.regea.hr/vijesti/smartinmed-%E2%80%93-predstavnicivode%C4%87ih-europskih-klastera-u-posietu-agenciji.html>

The newspaper "Alto Adige" (edition of March 4th, 2017) has reported the opportunity offered by the agreement between UNIBZ and the Italian-German Academy of Meran to broadcast the lectures of some courses held within the program "Studium Generale". Among them, the course "Creative thinking and safeguarding inventions" held by dr. Borgianni is mentioned. The link of the web edition follows (in Italian):

<http://altoadige.gelocal.it/bolzano/cronaca/2017/03/04/news/all-accademia-italo-tedesca-due-corsi-in-streaming-1.14978916>

Within the TV program "Campus", Rai Südtirol has broadcasted a service about UNIBZ research on eye-tracking, in which dr. Borgianni has appeared and has been interviewed. The video (in German) is available on UNIBZ Youtube channel; link [here](#).

Dr. Borgianni has been interviewed during the live program of the Long Night of the Research 2019 broadcasted by Rai Südtirol (in German).

Dr. Borgianni has presented the Studium Generale and the courses he offers during the program "Greenwich" broadcasted on September 11th, 2021, Radio Rai Alto Adige (in Italian); link [here](#).

A video-presentation of the TinyFOP project is available [online](#); dr. Borgianni presents here UNIBZ main goals within the project.

The webinar "Additive manufacturing: training and education to ensure product quality" is publicly available [here](#).

The webinar "How do users perceive the products' sustainability performance?" is accessible [here](#) for all members of the Design Society.

Recent appearances in the UNIBZ news regard:

- The launching event of the TinyFOP project, [here](#)
- The organization of the ETRIA World Conference "TRIZ Future" 2021, [here](#).

Other academic achievements and awards

The magazine "The European Financial Review" has invited the authors of the book "Re-engineering of Products and Processes - How to achieve global success in the changing marketplace" (indicated above as L1) to provide a summary of its main contents. The corresponding article with the same title of the book has been published in the June-July 2012 issue, pages 21-24. The document is available at <http://www.europeanfinancialreview.com/?p=1840>

Some publications have been awarded.

- The article A9 has been awarded as distinguished article by the publishing journal for the year 2013.

- The article B16 has been awarded as outstanding contribution by the conference scientific committee.
- The article B46 has received the best paper award by the conference scientific committee.
- The article A30 has been awarded as Distinguished Paper and recognized among the most read articles of Volume 8 (2020) of the Journal.
- The article B65 has been awarded as outstanding contribution by the conference scientific committee.

Further data

In the last five years, Prof. Borgianni has presented and discussed the contributions B31, B32, B33, B34, B35, B41, B42, B44, B45, B49, B50, B55 and B62 (podium); B36 and B39 (poster); C2 (invited) in the respective conferences and congresses.

Other third-mission activities (disseminations, technology transfer)

Dr. Borgianni has been appointed as trainer for topics concerning Intellectual Property procedures in the framework of the project SMARTinMED (transnational cooperation Programme MED, funded by the European Union's Regional Development Fund). The training sessions have taken place in:

- Zagreb (Croatia), on November 26th, 2014 (in English)
- Sesto Fiorentino (Italy), on December 19th, 2014 (in Italian).

Dr. Borgianni has participated in initiatives aimed at raising interest towards the University world. Main divulgation topics have concerned Reverse Engineering and Rapid Prototyping technologies. Other initiatives (not listed below) targeted the visit of the Mechanical Lab.

- Internship Week for Highschool Students, 27 October 2017
- Junior Uni, 30 May 2018
- Internship Week for Highschool Students „Rendezvous mit dem Traumberuf“, 27 October 2017, 26 October 2018, 25 October 2019, 28 October 2022 (scheduled)
- Long Night of the Research, 2016 and 2019 editions.

Dr. Borgianni has held the invited lecture “The outreach of engineering design and instructions not to get lost” at the Technical University of Denmark, Copenhagen, Denmark, May 1st 2019

Dr. Borgianni has held a public webinar titled “How do users perceive the products’ sustainability performance?”, organized by Special Interest Group of the Design Society “Sustainable Design”, September 24th, 2020.

Dr. Borgianni has served as a panelist in the workshop “Domain independent design theory and methodology” (Chairs: Proff. Joshua Summers and Yong Zeng) within SDPS2020, online conference of the Society of Design and Process Science, November 19th, 2020. The title of dr. Borgianni’s contribution was “Industrialists use design methods on a daily basis but they do not know that. That is why they think they do not need better design methods”.

Dr. Borgianni has held a public speech in the webinar titled “Additive manufacturing: training and education to ensure product quality”, organized by NOI Automotive on November 25th, 2021. The title of the talk was

“Training students in (Design for) Additive Manufacturing: local and global perspectives”.

Dr. Borgianni has participated as a speaker in the final event meeting for the project Tiny FOP, held in Silandro, Italy, on June 17th 2022. The outcomes of the project have been also presented by dr. Borgianni at the event “Sustainability Days” on September 7th, 2022.

The lectures and courses held within Studium Generale, inferable from the section “Experience in Academic Teaching”, are to be considered as third-mission activities, since Studium Generale is a life-long learning program.

**National
Qualification
ASN**

– The judgement reported by the National Evaluation Commission for ASN as regards the qualification for the functions of Associate Professor and published on April 17th, 2017, is reported below in the original language.

“Il dott. Borgianni, è Ricercatore universitario a tempo determinato L.240/10 tipo A del SSD ING-IND/15 Disegno e Metodi dell’Ingegneria Industriale dal 07/01/2015 presso la Libera Università di Bolzano. Il contributo del candidato alle attività di ricerca e sviluppo svolta è significativo ed è maturato in collaborazioni con le Università di Firenze ed il Politecnico di Milano; le attività di ricerca sono senza dubbio centrate e coerenti con le tematiche di riferimento del settore concorsuale e del settore scientifico disciplinare per il quale chiede l’abilitazione scientifica nazionale.

Il candidato è valutato positivamente con riferimento al titolo 1 dell’Allegato A al D.M. 120/2016, atteso che gli indicatori relativi all’impatto della produzione scientifica raggiungono tutti e tre i valori soglia previsti dal D.M. 602/2016.

Il candidato ha presentato complessivamente N. 12 pubblicazioni scientifiche.

In base ai criteri di cui all’art. 4, del D.M. 120/2016, si esprime quanto segue:

- a) le pubblicazioni sono complessivamente coerenti con le tematiche del settore concorsuale;*
- b) l’apporto individuale nei lavori in collaborazione è significativo;*
- c) la qualità della produzione scientifica, valutata all’interno del panorama nazionale e internazionale della ricerca, sulla base dell’originalità, del rigore metodologico e del carattere innovativo è ottima;*
- d) la collocazione editoriale dei prodotti scientifici presso editori, collane o riviste di rilievo nazionale o internazionale che utilizzino procedure trasparenti di valutazione della qualità del prodotto da pubblicare è ottima;*
- e) il numero e il tipo delle pubblicazioni presentate nonché la continuità della produzione scientifica sotto il profilo temporale sono buoni;*
- f) la rilevanza delle pubblicazioni all’interno del settore concorsuale, tenuto conto delle specifiche caratteristiche dello stesso e dei settori scientifico disciplinari ricompresi è buona.*

Le pubblicazioni sono complessivamente coerenti con le tematiche del settore concorsuale e con quelle interdisciplinari ad esso pertinenti, e valutate di buona qualità attesa la collocazione editoriale e gli ambiti di interesse. La produzione scientifica del candidato è caratterizzata da una collocazione editoriale su riviste di ottimo rilievo internazionale. In particolare la Commissione rileva che in alcuni lavori sono presenti spunti originali e nei lavori eseguiti in collaborazione l’apporto individuale del candidato, risulta di buon livello e si distingue per il rigore metodologico utilizzato. Tra le pubblicazioni presentate dal candidato sono degne di particolare apprezzamento le seguenti:

1- *Model and algorithm for computer-aided inventive problem analysis.*
2- *Towards the fine-tuning of a predictive Kano model for supporting product and service design,*
che danno contributi molto originali ed innovativi in merito alla diffusione dell'approccio inventivo alla progettazione concettuale ed alla progettazione per la qualità di prodotti e servizi.

Complessivamente le pubblicazioni presentate dimostrano un grado di originalità tale da contribuire al progresso dei temi di ricerca affrontati e possono essere ritenute di qualità adeguata in relazione al settore concorsuale.

Alla luce delle valutazioni di cui sopra e dopo approfondito esame del profilo scientifico del candidato la commissione all'unanimità dei Commissari ritiene che lo stesso presenti complessivamente titoli e pubblicazioni tali da dimostrare una posizione riconosciuta nel panorama della ricerca come emerge dai buoni risultati della ricerca in termini di qualità e originalità per il settore concorsuale rispetto alle tematiche scientifiche affrontate. Conseguentemente si ritiene che il candidato possieda la maturità scientifica richiesta per le funzioni di professore di II fascia".

The judgement reported by the National Evaluation Commission for ASN as regards the qualification for the functions of Full Professor and published on May 4th, 2021, is reported below in the original language.

"Il candidato Yuri BORGIANNI è Ricercatore a tempo determinato L.240/10 tipo B dal 01/10/2019 presso la Libera Università di BOLZANO, inquadrato nel SC 09/A3 – PROGETTAZIONE INDUSTRIALE, COSTRUZIONI MECCANICHE E METALLURGIA, SSD ING-IND/15 – DISEGNO E METODI DELL'INGEGNERIA INDUSTRIALE. L'attività di ricerca svolta dal candidato ha riguardato diverse tematiche e prevalentemente la progettazione sostenibile, la creatività nella progettazione, l'impiego di strumenti per il tracciamento oculare nella progettazione e le metodologie per lo sviluppo creativo di prodotti, processi e servizi. E' caratterizzata da collaborazioni con diversi enti di ricerca nazionali ed internazionali ed i temi affrontati sono coerenti con le tematiche del Settore Concorsuale 09/A3 e, in particolare, con il settore scientifico disciplinare ING-IND/15. Il contributo del candidato alle attività di ricerca e sviluppo svolte è chiaramente desumibile dal numero limitato di autori nelle pubblicazioni.

Il candidato è valutato positivamente con riferimento al titolo 1 dell'Allegato A al D.M. 120/2016, atteso che gli indicatori relativi all'impatto della produzione scientifica superano tutti e tre i valori soglia previsti dal D.M. 589/2018.

Il candidato ha presentato complessivamente N.16 pubblicazioni scientifiche tutte su riviste internazionali. La Commissione, valutate le pubblicazioni secondo i criteri di cui all'art. 4, del D.M. 120/2016, esprime il giudizio di seguito riportato. Le pubblicazioni sono complessivamente coerenti con le tematiche del Settore Concorsuale e del settore scientifico disciplinare ING-IND/15 o con tematiche interdisciplinari ad esso pertinenti dato che hanno riguardato la progettazione eco-sostenibile, le metodologie per la valutazione della creatività e del valore percepito di un prodotto realizzato anche con tecniche di additive manufacturing e le metodologie per l'innovazione sistematica. La qualità delle pubblicazioni presentate, in termini di originalità e livello di innovazione, è in generale adeguata; tuttavia, si evidenzia che le pubblicazioni nn. 2 e 3 sono delle review. La collocazione editoriale è complessivamente molto elevata dato che tutte le pubblicazioni si collocano nei quartili superiori (14 in Q1 e 2 in Q2). La Commissione rileva che il contributo del candidato è chiaramente ravvisabile sia dal profilo scientifico sia dal numero degli autori delle pubblicazioni presentate che è

sempre minore o uguale a quattro. Il candidato ha presentato 75 lavori ai fini del calcolo degli indicatori con pubblicazioni a partire dal 2010. La produzione pubblicistica è copiosa ed è caratterizzata da continuità temporale. Complessivamente le pubblicazioni presentate dimostrano un grado di originalità tale da contribuire in modo significativo al progresso dei temi di ricerca affrontati e possono essere ritenute di più che buona qualità in relazione al SC 09/A3. Alla luce delle valutazioni di cui sopra e dopo approfondito esame del profilo scientifico del candidato, la commissione all'unanimità ritiene che lo stesso presenti complessivamente titoli e pubblicazioni tali da dimostrare una posizione riconosciuta nel panorama della ricerca come emerge dai più che buoni risultati della ricerca in termini di qualità e originalità per il settore concorsuale rispetto alle tematiche scientifiche affrontate. Conseguentemente si ritiene che il candidato possieda la piena maturità scientifica richiesta per le funzioni di professore di I fascia".

Language competence

- Italian, mother tongue
- English C1, Cambridge English - Advanced Certificate (achieved in 2015) and UNIBZ internal exam (passed in June 2017)
- German C1, Goethe Zertifikat (achieved in 2016)
- Slovenian B1 (self-assessed)

Prof. Borgianni has achieved the South Tyrolean Bilingualism (Italian-German) A Certificate, valid for the Province of Bolzano, South Tyrol – CEFR C1

I declare, pursuant to art. 76 of Presidential Decree 445/2000, that the information is true. I authorize the processing of my personal data in accordance with Legislative Decree 30 June 2003, n. 196 "Code for the protection of personal data" and the GDPR 679/16 - "European Regulation on the protection of personal data".

Bolzano, October 1st, 2022

Signature

