



Marinella Ferrara & Giulio Ceppi

IDEAS AND THE MATTER

What will we be made
of and what will
the world be made of?

Marinella Ferrara
Giulio Ceppi

IDEAS AND THE MATTER

What will we be made of and what will the world be made of?

Sciences and technologies are extending design fields, modifying materials and everything that surround us, even our body, redefining on a perceptive level the boundary between things and us.

To identify the actual evolution of the relationship between sciences, knowledge and design, the Madec (Material Design Culture Research Centre) of Politecnico di Milano, started in 2014 a wide debate with a series of contributions about innovation trajectories with well known scholars of many disciplines, researchers, professionals and companies. This public debate, entitled "Ideas and the matter" opens new options for design action today, new ideas, and the definition of design approaches, contributing to the development of a new methodology of creativity-driven material innovation that, in a world full of opportunities but also problems to be solved, helps design to play a role of "giving new meanings", through designing materials and things with a critical approach. This is a mission designers cannot abdicate, following the successes of "Design Thinking", which was opening up to social innovation challenges and achieving creative solutions beyond the reach of conventional structure and method. At the same time, "Open Innovation" is a go-to process stimulating way of creating positive change in production.

This book is the compendium of Madec's one-year research. The contributors of the book come from several and diverse disciplines (medicine, biotechnology, engineering, art, anthropology, architecture and design), which design thoughts are fed by.



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MILANO 1863



DESIGN EXPERIENCES

IDEAS AND THE MATTER

**WHAT WILL WE BE MADE OF
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DIPARTIMENTO DI DESIGN



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Material Design Culture Research Centre is the research center and network dedicated to materials for design of the Design Department of Politecnico di Milano. It deals with the relation design-materials among design history and actuality. The center carries researches on the Italian Culture of Materials Design, intended as the capacity of the Italian design to interpret materials and technologies in order to generate products and environments innovation. The research team is composed by: Marinella Ferrara (coordinator), Giampiero Bosoni, Giulio Ceppi, Sebastiano Ercoli, Chiara Lecce, and Andrea Ratti.

www.madec.polimi.it

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INTRODUCTION

MARINELLA FERRARA
GIULIO CEPPI

This book aims to present the founding research undertaken by the Politecnico di Milano's Material Design Culture Research Centre (Madec). Founded in 2014, Madec obtained the Design Department's support during its first year by being granted the *Fondo di Ateneo per la Ricerca di Base* (FARB 2013) for "Fundamental/Foundational/Exploratory Researches that are strategically assessed for scientific growth in a research department".

Madec's research is at the heart of the *Material Design Culture* concept, defined at the beginning of the research as "the whole that includes knowledge, beliefs, ethics, habits and any other skills acquired in the relationship between design and materials" (Ferrara & Lecce, 2015a). Material Design Culture is based on design expertise in the adoption, interpretation and invention of material technical advances, in order to develop technological and scientific opportunities for productive activities, and to make human experiences with objects and living spaces the most meaningful, rich and rewarding. The Material Design Culture is very rich in Italy, thanks to the craftsmen knowledge, design skills and industries's capabilities on manufacturing, and also thank to the debate on design qualities.

Madec's work team is composed of: Giampiero Bosoni, full professor of Interior Design and design historian who, since his cooperation with Vittorio Gregotti and his work for *Rassegna* magazine in the 1980s, became the spokesman for the issue on the relationship between design and materials; Giulio Ceppi, senior researcher of Industrial Design and an architect who, in the 1990s, cooperated on the materials identity issue with Ezio Manzini and Antonio Petrillo in the Domus Academy Research Centre; Andrea Ratti, associate professor of Industrial Design, designer in the nautical sector and expert on composite materials based on fibres; Chiara Lecce, PhD in Interior Architecture and Exhibition Design, and Sebastiano Ercoli, PhD in Industrial design. The team is coordinated by Marinella Ferrara, associate professor of Industrial Design, focused on the relationship between design and technology for innovation, authors of a number of publications that link micro-stories to macrostructures, and for rethinking the relationship between design and materials as a dynamic of the socio-technical innovation process.

Starting from the key concepts of Material Design Culture, and considering the Italian cultural context within which Madec was conceived and operates, the founding research was organized in two phases.

The first phase focused on the identification of the *Italian Materials Design Culture* through a historical retrospective study. Starting from the past and studying Italian design's consolidated practices has been a useful strategy to deeply understand the specific Italian approach "to interpret materials generating innovation", in both linguistic and deployment terms, and even through its evolution in the international context. This historical study, by means of prominent scholars' original research contributions on the topic, was published in the *AIS/Design. Storie e Ricerche*, the scientific journal of the Association of Italian Design Historians. This issue entitled "Italian Material Design: learning from history", edited by Giampiero Bosoni and Marinella Ferrara (2014), is rich in contributions, discoveries and insights on Italian Material Design Culture. It is largely based on the original archive documents that report the history of small and large companies, as well as episodes of handcrafted excellences from different Italian regions during the XX century. The collection of contributions proves

the definition of an Italian way founded on the historical dialogue between technique and aesthetic and on the particular attention of Italian designers for designing and communicating materials' meaning and values.

Madec's second research phase, to which this book is the *compendium*, focused on the future design perspective of Material Design Culture's evolution on the basis of the emerging perception of the world which is facing an increasingly complex scenario of scientific advances, socio-economic problems and challenges.

In October 2014, in order to identify the actual evolution of the relationship between science knowledge and design, MADEC started a wide debate with a series of open lectures and seminars entitled "The ideas and the matter: What will we be made of and what will the world be made of?" (Ferrara & Lecce, 2015b; Lecce, 2015). This initiative was organized in partnership with the Giannino Bassetti Foundation¹ which is socially engaged on responsible innovation, and with the Cittadellarte-Fondazione Pistoletto² that promotes art's interaction with all the areas of human and social activity. Therefore, the initiative was conducted in parallel with the Final Synthesis Design Studio of the Interior Design Degree (academic year 2014/2015) coordinated by Giulio Ceppi, with Fortunato D'Amico, Massimo Facchinetti and Francesco Samorè, acting as discussant facilitators in the seminars. Many other colleagues from different Politecnico di Milano departments have been participating in the lectures as discussants, and thus enhancing public debate.

The integration between research and didactic activity has been very stimulating. The students were invited to work in the Final Session Workshop to solve project tasks, thus defining new areas of research and reflection, including ideas from the lectures. The Workshop's objective was, therefore, to re-interpret the concept of interior design in the context of the great social and technological transformations in progress and the expansion of the design scales that confront the designer in the face of new and complex responsibilities. It was stimulating to see the students' project results evidencing the influence of the different concepts assimilated from the lectures. All the heterogeneous contributions stemming from professional experiences, theories developed and applied research in several disciplines (medicine, biotechnology, physics, engineering, anthropology, art, architecture and design) which feed design concepts, have had the merit of significantly broadening and deepening the themes. The debate demonstrated that design is a powerful tool for mediation in very different specializations, and an innovation tool addressing the challenge from very different perspectives. Design plays a role of providing new meanings in a world full of opportunities, yet also with problems to be solved. Envisioning design for emerging markets is crucial in order to create or enter the market.

Narrating and considering advanced scenarios in design schools is a challenging task that facilitates the advancement of the expertise domain needed to create meaningful disruptive ideas. But today, this is no longer sufficient to respond to innovation's complex dynamics. There is a lack of knowledge on how to apply innovation in a complex system as a cyclical and repeatable process. Small and medium-sized enterprises are looking for new markets and new applications but are limited to new business partners or new processes. The innovation process is long, and such companies may not move on to expand the application base. They need the support of

technology centres and technology transfer companies to facilitate this on a wide scale. Material experts from the design world can also play an important role in facilitating the required research network. Madec initiated the very first steps in this direction by organizing other activities: the design workshops "Material Design. Regenerated plastics for food packaging" (2014), "Material Design. Contaminazioni ceramiche" (2015), and "Marble Visions" (2016), all in partnership with enterprises in order to understand what today companies actually need in the materials and product sector to bring about innovation and let it flow proposing new product/service concepts; and, the networking workshop "Stone reinforced ecoconcrete. Open innovation Project" (2016) to stimulate a new research approach for material sector starting from new visions of material, production cycle and product concept; all this together with an open access web site project (www.madec.polimi.it) to publish updated news on interesting case studies and research that is focused on materials design in the international scenario. These activities yielded suggestions for advancing a *material thinking* approach and an *open innovation* discourse.

A new opportunity for the Madec research came from the European tender "Capabilities for design-driven innovation in European SMEs" (2015) founded by EASME (European Agency for Small and Medium-Sized Enterprises). During this project, set up by the consortium formed by D'Appollonia³, MIP⁴ and ADI⁵, Madec was involved in drawing up a module on the relationship between material and design and proposed the "Design for Materials" module. Designing this module, based on the reasoning and reflections inspired by previous activities, has allowed MADEC's research to be finalized into an easy tool that contributes to the dissemination of a set of information and skills to accelerate the material innovation processes among design and production professionals, companies and intermediate organizations. The Design for Materials module includes information on the several factors to be considered for developing or choosing a material for consumer products. It proposes the concept of material performances, a concept that takes into account sensory perception, consumers' experiences and cultural values, as well as functionality related to the materials' properties. It also enabled the proposal of the Design-driven Material Innovation Methodology as a tool of open innovation, to manage a design process where different actors, such as researchers, suppliers, creative communities and customers are becoming deeply engaged.

^{1.}
<http://www.fondazionebassetti.org/>

^{2.}
<http://www.cittadellarte.it/en>

^{3.}
<http://www.dappollonia.it/en>

^{4.}
<http://www.mip.polimi.it/en>

^{5.}
<http://www.adi-design.org/>

The Design for Materials module, integrated with design, design management and process engineering modules, makes up the “Design for Enterprises” - a three year programme of training courses to support design-driven innovation. These courses involve the use of old and new materials, new production tools and processes and approaches to better meet customers’ needs. The programme provides for the implementation of 50 courses (short and full-term) in 29 different European and associated countries from 2016 to 2018.

In conclusion, after describing the Madec research process, this book shall publish selected contributions from the public debate it has been developing, essays on the theoretical reflection that was derived from the public debate within the research group, and phenomenological and both theoretical research on design approaches in order to develop the Design-driven Material Innovation Methodology, all grouped into three different chapters.

In the first chapter, the book collects selected trans-disciplinary contributions that emerged from the series of seminars “Ideas and the matter: What will we be made of and what will the world be made of?” (held from October to December 2014). Following the structure of the seminars, contributions are divided into three sections: Extension, Osmosis and Inclusion. These words/concepts act as metaphors of the complex, and often conflicting, relationship between polarities such as interior-exterior, body-space and artifice-nature, that are increasingly characterizing the contemporary design world. We pioneered and coordinated the seminars based on these thematic areas. Each section is introduced by a discussant facilitator and publishes the text of the lectures.

Francesco Samorè introduces the section *Extension* or from the inside of our bodies to the outside, starting from how technologies and fields of knowledge such as genomics, bio technologies and nanotechnologies are changing the concept of life and body, but also on how it is possible to visualize the invisible and infinitely small to understand and modify it, rather than knowing and measuring everything that happens in our body with biometrics or the quantified self. The infinitely small redefines us and redefines itself, creating new grounds for design and social value.

The concept of Extension is addressed by the molecular biologist Giuseppe Testa, director of the Laboratory of Stem Cell Epigenetics of the European Institute of Oncology and European School of Molecular Medicine (Milan). Testa explains how our relationship with technology is changing today. The power of biotechnology deconstructs the body into its parts making visible what was once obscured, and blurs the borders between natural and cultural and internal and external perpetually, reshaping and redesigning the images of the human body and the ways in which this body is conceived.

Massimo Facchinetti presents the section *Osmosis* or the balance between the interior and the exterior, between our physical and energetic boundaries: skin as a psychic limit and place of narrative, from tattoo to intradermal patches. Just as all of today’s architecture plays on the skin’s theme: sophisticated technical systems and materials work on the bioclimatic and plant-based membranes and on the exchange between the internal and the external. It is the body theme of smart skin on the one hand, but also the delicate relationship between urban services and functions, public and private osmosis, between open and closed, between ephemeral and enduring. The concept of Osmosis, as generically defined by the dictionary is a gradual, often unconscious,

process of assimilation or absorption. This definition well fits the aim of this second section of lectures that try to give a correlation between different disciplines similar to an osmotic movement. The Osmosis concept was tackled by the artist Michelangelo Pistoletto, who explains his project *Third Paradise* concerning the conflict between *nature* and *artifice*. Another contribution is *Mater Materia* by the designer Clino Trini Castelli who, along with his work on color and material surfaces, addressed the role of a number of other “subjective” aspects of space, including light, sound, temperature, texture, and scent. In 1972, he coined the term *design primario* for this work, following Roberto Cingolani, a physicist and Scientific Director of the Italian Technology Institute (IIT) in Genoa. His work includes different fields of scientific research such as: *Advanced Robotics* or *Nanophysics*. Collaborating with the designer Chris Bangle, he explored the future of consumer applications for robotics and the approach to human-machine interaction that attempts to renegotiate the idea of “robot” away from that of industry and into an arrangement of emotional and functional interpretation. The last Osmosis essay is dedicated to the work of Maurizio Montalti, a young designer and founder of the Officina Corpuscoli studio in Amsterdam, an interesting example of design driven by materials experimentation. In his specific case, the material used is the fungus *Mycelium* which is able to grow on a wide variety of substrates with the potential of converting waste products into novel compounds, characterized by diverse qualities. Fortunato D’Amico presents the section *Inclusion* i.e. the advancement of the outside inwards, of the environment loaded with information that is immersed within us and which increasingly takes on push logic: wearable technologies that change our relationship with the outer space, putting on (when not Inside) things and systems that were “out” before: consider goggle glasses, which seems to be like applying a layer and augmenting reality. As regards the city’s macro and physical scale, it is also the agriculture that returns to the city, so the gardens become roofs, rather than the productive periphery that returns to the historical centres.

Our inner vision amplifies our capacity to perceive and absorb the outer. In the educational field, the encounter of different knowledge, before separated, could become an ideal procedure to implement participatory approaches and sharing processes. Designer responsibilities to society and the environment have to be constantly in evidence, especially today that we are facing a continuous growth of dumps also because of the uncontrolled production of design objects. Inclusion is faceted by Stefano Marzano and Marc Augè’s tireless efforts to analyze the contemporary world with the tools of their relative professions and cultural approaches. Stefano Marzano brings his long lasting experience as Chief Design Officer and CEO of Philips Design in Philips between 1991-2011. Marc Augé, the famous French anthropologist, who opposes the “City World” of global business, tourists and architects for the “World City”, the megacity where all differences become apparent - social, ethnic, cultural and economic.

In the second chapter, the book collects the interpretative picture of Madec members. Following a debate with a strong international and interdisciplinary character, researchers opened different insights on changes in practices with a wider vision of the “matter and materials” and “design and meta-design” concepts. The team was urged to reflect on the following points to enlarge the fundamentals of our knowledge, with a common idea of cross-pollination between disciplines:

- The depth of our look inside matter is augmented, the real matter on which we focus our look has changed and the places and actors of knowledge production have changed as well;
- The complex relation between technology and nature, considered hostile, could be skillfully managed by humans through all the “meanings” that creativity could contribute to conceive and express the avoidance of obsolete models;
- Today, nature could become the measure and method for designing the artificial, guaranteeing sustainability and beauty, and therefore competitiveness;
- The knowledge gap that high specialization contributed to creating could be overtaken through a wider multidisciplinary.

Open and shared knowledge is the only way that will enable us to propel ourselves toward the future. Thus, Giampiero Bosoni proposes a new interpretation of the wide relationship between ethics and design. Giulio Ceppi proposes a reflection on the future perspective of design, according to the extent to which the boundaries of human knowledge have been expanded from the macro-world to the micro-world. Chiara Lecce analyses the contemporary design scenario on the basis of a growing hybridization between natural science, engineering and design disciplines, thanks to a greater capacity of researchers to integrate and coagulate experiences under the umbrella of a more sustainable future.

In the third chapter, the scientific discourse focuses on the changing approach of product materiality and the evolution of research methods. Today, changes are opening new options for design action, new ideas and the definition of design approaches, contributing to the development of new methodologies. In this chapter, Marinella Ferrara traces the fundamentals of Material Design in the Italian design history, and analyses the changes in design discipline to arrive at the definition of *design-driven materials*. In the new dimension of the contemporary Material Design Culture and, together with Chiara Lecce, presents the *Design-driven Material Innovation Methodology* which provides for the integration of tailor-made materials during the design process, in order to create new scenarios of material and product concepts. In this methodology, design plays a role of giving new meanings through the design of materials and products with a critical approach. This is a mission that designers cannot forgo, following the recent successes of Design Thinking, which is opening up to the social innovation challenge and achieving creative solutions beyond the reach of conventional structures and methods.

In the research process, due to the understanding and interpretation of social needs, design is pushing users’ desires towards the opening of new visions on use and the application of old and new materials systems, and delivers them to customers through new product characteristics and storytelling approaches. This innovation is able to give new meanings, new experiences and is opening new markets. On the subject of materials, this means considering markets and final users as the main drivers, focusing on new product concepts and on new applications that are able to generate unexplored design solutions as well as innovative behaviour in society and, in so doing, generating business.

Madec has initiated the very first steps to drive material design research towards an open innovation approach, but much more has to be done in order to fulfil this goal.

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Like any design process, also a research and a book are greatly influenced by the relationships that occur during its doing. We would like to express our sincere gratitude to all those who gave up their time to contribute to the research activities like meetings, seminars, workshops, and the series of lectures we have been organized. We are sorry that we have not been able to publish all the contributions. We are grateful to: Pietro Cecini from Roadrunnerfoot, Matteo Lai from Empatica, Chris Bangle from Chris Bangle Associates, Raymundo Sesma from Campo Expandito, Marco Baudino from Future Power and Tiziana Monterisi from Nova Civitas. Their contributions stimulated us to widen our research from various perspectives.

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We are grateful to our colleagues for participating as discussants to the seminars the colleagues. Those are: Mario Bisson, Luisa Collina, Fiammetta Costa, Barbara Del Curto, Luca Guerrini, Maurizio Masi, Marina Parente, Silvia Piardi, Giovanna Piccinno, Dina Riccò, Valentina Rognoli, Paolo Volonté.

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***AUTHORS'
BIOGRAPHIES***

Marc Augé is one of the most influential anthropologist of the contemporary age. He is a French Ethnologist and anthropologist, he is renewed for his studies on contemporary worlds and his attention to the global and cosmopolite dimension that associate colonial communities and the Western world. He has been director of the *École des hautes études* of Paris. He elaborated the theory of “non-places” to refer to places of transience and de-culturalized that do not hold enough significance to be regarded as “places”. Theory expressed in his most relevant publications: *Un ethnologue dans le métro* (1985) and *Non-lieux: introduction a une anthropologie de la surmodernité* (1992). He has recently published *L'anthropologue et le monde global* (2013), about the paradoxical effects of globalization.

Giampiero Bosoni, Full professor of Interior Architecture and Exhibition Design at the School of Design of Politecnico di Milano. Architect and expert of Design History and Theory, he collaborated with Figini and Pollini architects, Vittorio Gregotti and Enzo Mari. He has realized several articles and collaborated with specialized journals and magazines: *Domus*, *Lotus*, *Abitare*, *Casabella*, *Interni*, *Ottagono*, *Crossing*, *Progex* (director), *Print*, *Rassegna* (editor), *Brutus Casa*, *Pluriverso* and others. He curated the exhibitions: “Museo del Design”, giving birth to the first core of the historic collection of Italian Design of the Triennale di Milano; “Made in Cassina” (Triennale di Milano, Tokyo, Paris and New York); “Il modo italiano. Italian design and Avant-garde in the 20th Century” (MBAM Montreal, ROM Toronto, MART, Rovereto). He is author of several books for Skira and MoMa among others.

Clino Trini Castelli, designer and design theorist. From the 70s he is pioneer of the emotional development of products identity and of the esthetic sustainability of the industrial sector. With Castelli Design studio he is involved into international activity concerning product design, strategic design and CMF planning and design. He is author of several publications and books about these topics and he perceives teaching activities by the main international schools of design. His work has been award with European, American and Japanese rewards, including ADI Compasso d'oro, the IBD Gold Award and IF Product Design Gold Award.

Giulio Ceppi, architect, designer and PhD. From 1990 to 1997, he was the coordinator of the Domus Academy Research Center, and from 2004 to 2007 the first director of the DA Master in Business Design. Since 1995 he is a researcher at Politecnico di Milano and a professor of Industrial Design in the Design School. His activities are focused on sensorial design, new materials and technologies, and design strategy. After the experience of senior design consultant at Philips Design (1998-2001), in 1999 he funded Total Tool, a design network (Milan, Buenos Aires and Tokyo) consulting and designing new business ideas, exhibitions. He's author of a number of books about innovation practice: *Children, space, relationship* (1997), *Oggetti esistibili* (2005), *Design epigenetic* (2009), *Design Storytelling* (2011), *Awareness Design* (2012).

Roberto Cingolani, physician, expert of the robotics and biomimetic. From 2005 he is Scientific Director of the IIT (Italian Institute of Technology) of Genova. He has been staff member at Max Planck Institut for Festkoerperforschung in Stuttgart (Germany), visiting Professor at the Institute of Industrial Sciences, Tokyo University (Japan), visiting Professor at Virginia Commonwealth University, Richmond (USA), professor of General Physics at the Engineering Faculty, Lecce University (Italy) and Founder and Director of the National Nanotechnology Laboratory (NNL) of INFN in Lecce (Italy). He is author of about 750 papers in international journals and he holds about 48 patent families in the fields of nanotechnology, robotics and biotechnology.

Fortunato D'Amico, graduated in Architecture, deals with transdisciplinary connections: art and architecture, philosophy and science, etc. He has been working on catalogs of various international publishers and has been producing some television broadcasts for the SKY network, such as Archibalena. He is among the organizers of the Dedalo Minosse International Award. He is the curator of the exhibitions such as: Vergilius d'Oro Prize and exhibition in Mantova, 2010; Architecture Laboratory in Milan, 2010; Nino Mustica: Pittura solida in Pietrasanta, 2010; Think Green, Milan, 2010; Chiara Dynys: Labirinti di memoria - Più luce su tutto - in Rome, 2010; Culture_Nature 2010, at Venice Architecture Biennale; Urban Solutions 2009 in Milan; Arte in Luce 2009 in Turin. He has been teaching with a temporary appointment at the Politecnico di Torino, the Politecnico di Milano and the Accademia di Brera.

Massimo Facchinetti, is an architect and designer involved in environmental design since 1997. He has been teaching with a temporary appointment in the School of Architecture and Design of the University of Milan, Florence, Turin, Brescia and the Politecnico di Milano. In 2004 with Carlo Bono and Alessandra Boccalari, he founded Facchinetti & Partners working in industrial consulting and eco-building. He is a member of AEREC (Accademia Europea per le Relazioni Economiche e Culturali).

Marinella Ferrara, architect, PhD, associate professor of Industrial Design at Politecnico di Milano, and the coordinator of MADEC (www.madec.polimi.it). Her research and teaching interests focuses on the relationship between design and scientific/technological innovation, with a particular focus on emerging materials. In the last years she has been engaged in the EU project *Design for Enterprises*, and in the Executive Board of ADI, coordinating the scientific committee for long-term professional development of designers. As an expert in the communication of the design contents, from 2011 she has been the editor in chief of the scientific journal *PAD. Pages on Arts & Design* and guest editor of *AISS/Design. Storia e Ricerche*. She is the author of over 100 publications among books, essays and articles in international journals.

Chiara Lecce, MSc, PhD in Interior Architecture & Exhibition Design. Since 2008 she is involved in History of Design classes and Interior Design Studios at the Design School of the Politecnico di Milano. Since 2009 she collaborates for the Fondazione Franco Albini and with other well known Italian design archives, other than continuing to work as a freelance interior designer. From 2013 she is the managing editor of the scientific Journal PAD (Pages on Arts and Design) and member of the AIS/Design (Italian Association of Design Historians), as well as author for several scientific design Journals. She is currently research fellow and lecturer at the Design Department of the Politecnico di Milano. Since 2016 she is a tutor among the European project “Design for Enterprises”.

Stefano Marzano, has been the former Chief Design Officer of Royal Philips Electronics for 20 years since 1991. He is the Founding Dean of THINK, the Amsterdam School of Creative Leadership.

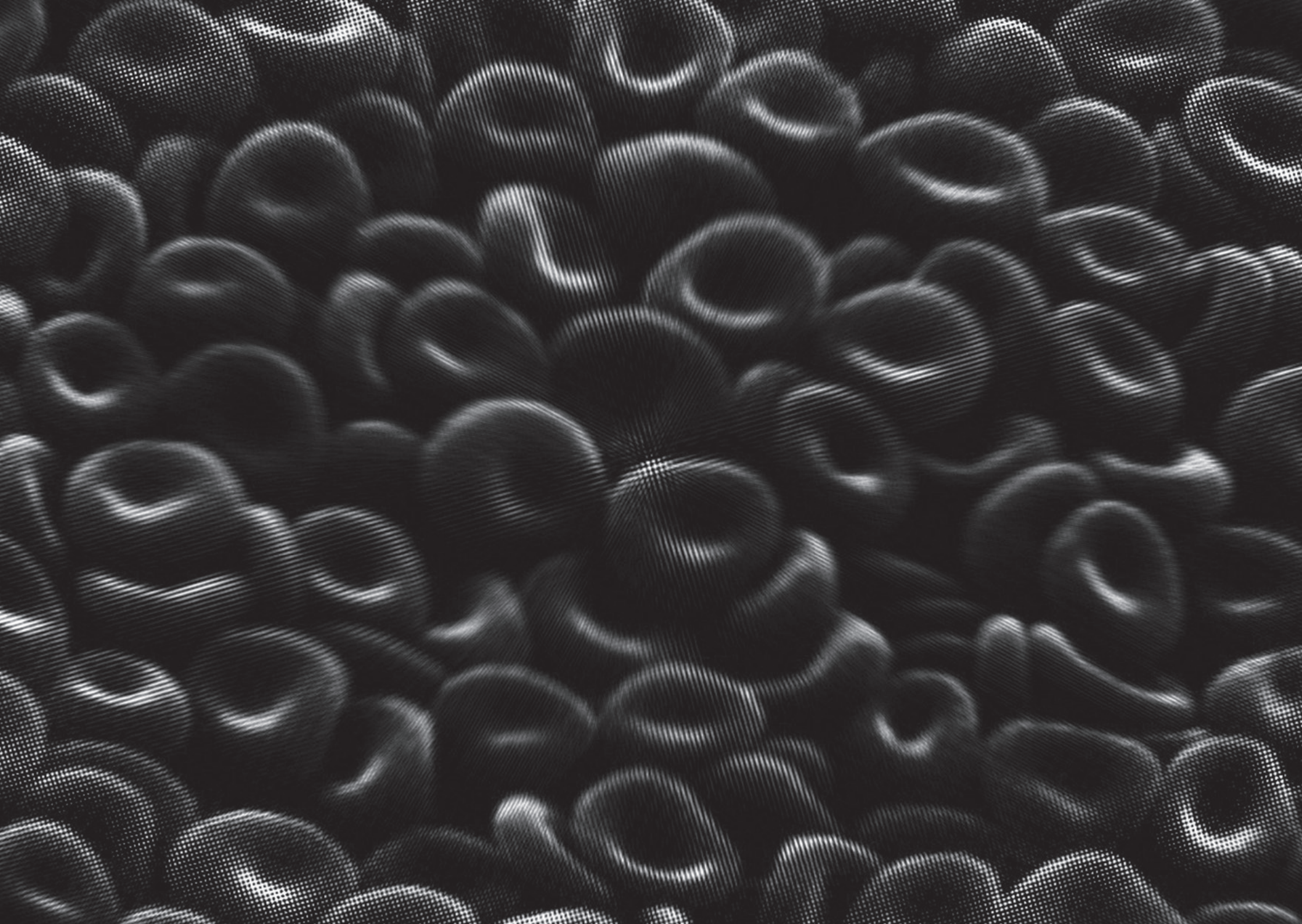
Author and editor of several publications about design, till 1998 he has been professor at the Domus Academy in Milan and visiting professor from 1999 to 2001 of the Politecnico di Milano. He is member of the European Design Leadership Board. He received the honorary PhD in Design from the Sapienza University in Rome and from the Hong Kong University Polytechnic. In 2005 Businessweek nominated Marzano one of the four “Best Leaders: Innovators” in the world and in 2001 he has been awarded of the World Technology Award for Design from the World Technology Network.

Maurizio Montalti, is a designer, researcher, artist, and engineer. In 2010 he founds Officina Corpuscoli, a multidisciplinary studio based in Amsterdam inspired by living systems and organisms. The studio's work has been internationally shown in museums, exhibitions and festivals. He is the co-founder of Mycoplast, a company focused on industrial scale-up of mycelium based materials. Currently he is co-heading the MAD Master at Sandberg Instituut, holding a Research position at Design Academy Eindhoven (DAE), as well as teaching in different national and international academies and universities. He is also co-founder and forming part of the Amsterdam-based WNDRLUST collective, alongside Mike Thompson, Sonja Bäümel and Susana Cámara Leret.

Michelangelo Pistoletto, Italian painter and sculptor, relevant exponent of pop art and Arte Povera, since the Sixties he has developed original artistic solutions, experimenting several materials and techniques, in order to actively involve the public inside his opera. Among the numerous recognitions received: the Leone d’Oro for his lifetime achievements at the 50° Biennale di Venezia (2003); the Wolf Foundation Prize in Arts (2007); the Praemium Imperiale of the Japan Art Association (2013).

Francesco Samorè, PhD in business history and business finance. Its main areas of research are: the structure and protagonists of the contemporary Italian economy and the analysis of energy utilities. He is the scientific director of Fondazione Giannino Bassetti, with the mission of promoting responsibility in innovation, following the relationship with affiliated institutions, both in Italy and abroad, on the four main operating areas: Innovation and Governance Responsibility; Responsibility for Innovation and Life Sciences; Responsibility for innovation and enterprise; Responsibility for innovation and risk. He has been collaborating with the Department of History Studies of the University of Milan (since 2006) and with the Department of Sociology of the Università Cattolica (since 2008). He is a member of the Italian Society of Economic Historians (SISE). Since 2006 she has been a researcher for the Business Culture Center in Milan.

Giuseppe Testa, heads the Laboratory of Stem Cell Epigenetics at the European Institute for Oncology (IEO) in Milan, where he is also Deputy Principal Investigator in the Research Unit on Biomedical Humanities. He is the cofounder of the interdisciplinary PhD program FOLSATEC (Foundations of the Life Sciences and Their Ethical Consequences) in Milan. He accomplished his academic education in biology at the Embl of Heidelberg and in bioethics and science sociology at the Manchester University and Harvard. He published on the main journals concerning biomolecular, bioethics and sociology disciplines.



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