

## Editor's Note

Materials form everything we touch and see. The products that surround us are made of materials with specific properties. They have colours, textures, smells, tastes, and can even make sounds. If one observes them more closely, it becomes clear that they are formed by atoms that are composed of electrons, protons, and neutrons which are in turn a combination of leptons, quarks, and antiquarks. Delving deeper into these scales of matter, one can see that everything we behold is energy shown in the form of light, heat, magnetism, or other expressions. It is, therefore, the sum and combination of these energies that constitute what people generally call "materials".

Human evolution has been fully dependent on materials, their properties, and the energy they contain. Through basic transformation processes, our ancestors took advantage of the properties of basic materials such as wood and flint to produce the first hunting tools. During the 20th century, thanks in part to fossil fuels and modern industrial processes, new materials such as polymers, technical ceramics, composite materials, adaptive materials or technical alloys were synthesised or developed. These paved the way for the design of new solutions (products and services) that changed our way of living, making, feeling, and communicating. Materials have been, are, and will remain sources of innovation that designers and engineers use to respond to past, present, and future challenges to our societies.

In recent years, designers and engineers have begun to understand materials from new perspectives. We have learned that materials can also have emotional, social, or environmental properties that could open new creative and innovative paths. At the same time, the appearance of the latest advanced materials, such as graphene, or the exploration of the development of biological materials *in vitro*, blaze the trail towards a wide range of applications that will once again allow us to innovate to face future challenges more responsibly and coherently with our societies and the planet we inhabit.

At present, materials and design research regularly engages in discussions with other disciplines. These discussions are resulting in the study of the relationships between materials and knowledge, materials and society, materials and language, materials, sustainability, and the circular economy, materials and technology, or materials and design processes, among others. These approaches open spaces for debate that give rise to new research questions regarding materials and design, such as: How can we learn through materials? How can materials generate new knowledge? How did materials influence our societies and cultures? How do materials affect meaning? How do materials influence our new sustainable business models, such as the circular economy? What are the new and future materials-related technologies that will help innovation-driven design processes? Which new methods and theories mix materials and the design process?

The 34th edition of *Temes de Disseny*, entitled "Material interactions in the human-made milieu", aims to open new discussions and generate knowledge that will allow us to understand the different methods available for designing in terms of materials to respond to the aforementioned research questions. In this issue, one may not find concrete

answers to all the questions that have been posed, but there are tools or solutions that can serve as a source of inspiration and examples of tiny tweaks that, together, may lead to a paradigm shift spurred by design and engineering.

In this new academic journal format, *Temes de Disseny* readers will primarily find two areas of content. First, the general structure of the issue is composed of seven academic articles that study the relationship between design and materials. Thanks to the articles by Mette Bak-Anderesen and Karen Marie, we can learn about new proposals for the use of materials in implementing sustainable design for a circular economy. With her contribution, Kirsi Niinimäki presents the process of creating a new type of silk developed by joining the materials, design, synthetic biology, and art disciplines. Additionally, Marta González and Silvia Pizzocaro describe how they put material driven design (MDD) methodology into practice with students as an inspirational tool that enabled them to take full advantage of material properties during the design process. Finally, Marina Castan and Maite Bravo cover the influence of materials and processes for future architectural designs. Their contributions show that the combination of the digital world with the physical world, or the use of new production technologies associated with drones, can lead to new paradigms in shaping and building structures.

Second, readers will be able to enjoy two pictorials in which images take precedence over text, with the aim of serving as a source of inspiration for designers. These illustrations lead us to Jeanne Vicerial's project, which presents clothes inspired by human musculature that have been artisanally produced through a process that avoids generating waste, and to Claire Romain's experiment, which generates a provocative decontextualization of materials that forces us to question the relationships we have with the everyday objects that surround us.

It is now time to delve into the contents provided by this new issue's authors, to whom we are deeply grateful for their contributions. We hope our readers enjoy the new academic format for *Temes de Disseny* which aims to disseminate design research with scientific rigor, never forgetting the aesthetic essence of our discipline.



"The expressive-sensorial qualities of self-made bio-plastics", workshop by Valentina Rognoli and Marinella Ferrara. ELISAVA 18th Creative Marathon, 2018. Photo: Ardila.