

Preface

The city of Ilheus, Bahia, received the **Global Stone Congress 2018 (GSC)**, entitled **Connecting Minds in the World of Stone**, from April 26 to 29. The sixth edition of the event, organized by the Brazilian Association of the Dimension Stones Industry (ABIROCHAS) and the Centre for Mineral Technology (CETEM), brought together about 170 participants, among researchers related to the stone sector through Brazilian and foreign institutions, architects, designers, engineers, geologists, undergraduate students, as well as representatives of the productive sector, with the objective of sharing knowledge and discussing the challenges for sectoral development. Speakers from Saudi Arabia, Argentina, Brazil, Chile, Spain, Finland, England, Iran, Italy, Portugal, Czech Republic and Sweden honored the event. There were 17 lectures and 54 papers in the technical sessions and three round tables.

The Global Stone Congress is consolidating as the main technical-scientific event in the world of natural stone. It had its first edition in 2005, in Guarapari - ES, Brazil, while it was still designated International Congress on Dimension Stones (ICDS). The event arose from a partnership between the Centre for Mineral Technology (CETEM), a research institute of the Ministry of Science, Technology, Innovation and Communication (MCTIC) and the Center for Technology of Marble and Granite (CETEMAG), with the support of the Brazilian Association of the Dimension Stone Industry (ABIROCHAS) and associates of the Brazilian Dimension Stones Technology and Quality Network (RETEQ-ROCHAS). Other editions of the event were subsequently held in Italy (2008), Spain (2010), Portugal (2012) and Turkey (2014), adopting the formal name GlobalStone Congress in Spain (2010).

The lectures, workshops, technical sessions with oral presentations and posters, special topics and round tables focused on the themes of Architecture, Technology and Sustainability.

The architect's role as a specifier of stone products, acting as a fundamental link between the producer and the increasingly demanding consumer, was a theme widely discussed on the first day of the event, as well as the issue of teaching about natural stones in Architecture courses and the need for greater interaction between research centers, universities, architecture professionals and industry. The importance of the adequate stones conservation to ensure their durability, especially of those used in monuments and historical buildings was also discussed. It was also presented, by members of the IUGS Heritage Stone Subcommittee the concept and examples of World Heritage Stones, rocks of recognized interest for their historical use throughout the centuries and, therefore, fundamental for the restoration of buildings and monuments of global cultural importance.

Discussions on the second day brought conflicting opinions about the application of the Industry 4.0 model to the stone sector, which involved both the need for the natural stone industry to join this model and the difficulty, due to the characteristics of this industry and the materials worked, to adhere to model 4.0. The need for new alternatives to remain in the market was also raised, given the growing trend of international production and commercialization of artificial stones and ceramic products in detriment of natural stones. At the morning workshop, latest quarrying, processing and waste-rock recycling technologies were presented, an also the Industry 4.0 model applied to the natural stones production, the Brazilian Industry 4.0 Program of the Brazilian Industrial Development Agency - ABDI and the Export Processing Zone - ZPE of Ilhéus. The technical sessions included production automation technologies, processing technologies, database softwares, robots use, as well as insights on the workforce in the stones sector, and about the world market, with emphasis on the Middle East.

Reflections on sustainability took place on the last day of the congress. A workshop on upmarket in the world of stone opened the conference, with the presentation of the International Institute of Marble - IS.I.M addressing the new technologies and solutions for the use of stone wastes and the sustainable project for small producers in Patagonia. Representatives of the Brazilian

company, Pettrus Mineração, showed the outstanding company's *modus operandi* of corporate social responsibility aiming at sustainability, including the use of renewable energy, controlled production to make the most of their deposits, due to the exclusivity of the exotic materials extracted from their quarries, research on wastes recycling and environmental education actions. The presentation emphasized the importance of the professionals to the better knowledge of the materials extracted, to the quarries' operation planning and to the adequate processing and use of stones.

Throughout the presentations, sustainable solutions to be applied to the stones production were demonstrated, such as waste water treatment systems and alternatives for waste recycling, such as new products that use in their composition stone residues, as well as new applications for this waste in civil construction and agriculture, in the latter being used as fertilizer, among others. The issue of circular economy in the ornamental stone industry was another topic widely covered in various presentations, as well as the application of the Life Cycle Assessment (LCA) and Building Information Modeling (BIM) tools.

This event has great importance, as it brings together international research groups and promotes the worldwide diffusion of knowledge, for the benefit of the industrial sector. This edition certainly represented a milestone in the industry-research interaction, with presentations of both technical, from representatives and consultants of the industry, as well as of a more scientific nature, from representatives of research institutions, covering all aspects of current interest of the natural stones sector. From the debates and discussions generated, many new ideas and global partnerships emerged, thus living it up to the desired goals and justifying the name Global Stone Congress. Satisfied with the good results, we thank all the participants and sponsors, wishing that in the next editions of the GSC we can see results of the ideas that have emerged in Ilheus, oriented to the academy-industry integration in favor of the natural stones sector development.

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