

FOREWORD

The first International Conference on Bio-based Building Materials (3BM) ICBBM2015 was held in Clermont-Ferrand, 22-24 June 2015. More than 150 participants from 32 countries attended the conference. Approximately 120 papers were selected for publications in the proceedings. In 2017 a significant progress has been made in the research, development and implementation of 3BM, and the second International Conference on Bio-Based Building Materials ICBBM-EcoGrafi 2017 was held in the same city from 21-23 June 2017. More than 230 participants from a wide range of academics, researchers, students, designers and policy makers and end-users from 40 countries and 130 papers were presented at the conference.

The ICBBM2019 is an international forum for information dissemination and exchange, discussions and debates on research and practice related to innovative bio-construction materials and technologies with objectives for sustainable development. To dynamically address these, and to capitalise real opportunities which they present for the future, Queen's University Belfast and University Auvergne bring together leading building and civil engineering sector players and international experts, and other key stakeholders for what promises to be a landmark event in 2019's professional and business calendar. Working together in an international context is nowadays a basic condition for progress. The considerable developments and challenges in a rapidly changing world ask for grouping of forces and a common approach.

The conference attracted 150 people a wide range of academics, scientists, researchers, students, designers, policy makers and other industrialists from a wide variety of backgrounds, including fields of engineering, materials, sustainable, architecture, and ecological technologies, biomaterials, materials sciences, environmental engineering and government agencies, end-users, etc. Participants have the opportunity to share ideas on the state-of-the-art innovations, state-of-the-practice and future trends of bio-based building materials and sustainable materials used in construction.

The ICBBM2019 proceedings include the keynote lectures and papers presented at ICBBM2019 conference. It consists of a book of full texts of papers and extended abstracts: 4 plenary papers and 120 papers from over 28 countries. The plenary keynotes and papers cover the wide spectrum of the topics related to Natural fibres and materials, Mechanical performances of bio-based building materials and design properties, Hygroscopic and hygrothermal properties of biomaterials, Acoustic and durability performance of bio-materials, sustainability of bio-based materials, Agro-by products, treatment of fibres, Eco-friendly binders with low CO₂-emission and Low embodied carbon energy, Advances in research methodologies and Bio-materials testing, modeling building materials Rammed earth, Life-cycle assessment of materials, recycling materials, and others.

On behalf of the Local Organizing Committee of ICBBM2019, we would like to take this opportunity to express our sincere thanks to all our contributors and participants for their carefully prepared, stimulating and thought provoking manuscripts; to the organisers of conference for their dedicated task; to the members of the Technical and Scientific Committee for their time and effort of reviewing the papers and their valuable assistance, without which the conference could not be formed.

The organisation of a conference of this scale could not have been possible without the support and contributions of many organisations and individuals. This conference would not have been possible without the financial support given by the numerous sponsors. We also value the support of RILEM organization (The International Union of Laboratories and Experts in Construction Materials, Systems and Structures), American Concrete Institute (ACI) and Concrete Society (CS).

Thanks go to all those who have devoted their time and effort to the organization of the conference and publication of the proceedings, including secretarial staffs and research students for their diligent work in bringing this ICBBM2019 to success!

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