ICGC 2019 is an international forum for the exchange of ideas and information on green construction. This conference offers an important opportunity for researchers, students and professional workers to discuss a wide variety of topics related to the use of environmentally friendly technology in the field of building and construction, what leaves a lighter footprint on the environment through a good management, a rational utilization and conservation of energy and material resources.

Construction sector is responsible for a significant share of global consumption of energy, electricity, water and materials. According to Intergovernmental Panel on Climate Change (IPCC) of the United Nations, the CO_2 production of this industry is almost 20% of global emissions. Development of new more efficient construction methods and technologies with a reduced level of environmental impact–is necessary. ICGC 2019 pretends to be a forum to study possibilities of these new technologies and the state of research about this field.

This Conference has been supported by European Commission within the Erasmus+ Project 2016-1-PL01-KA203-026152 “Virtual and Intensive Course Developing Practical Skills of Future Engineers (VIPSKILLS)”

ICGC 2019 will take place in Córdoba (Spain), on 8th and 9th, April 2019. The conference venue is one of the most beautiful and historical cities in southern Spain.

The International Scientific Committee (ISC) and the Organizing Committee (OC) of ICGC 2019 would like to invite you to participate and submit contributions relevant to the followings topics; however issues are not limited to them:

1. Circular Economy

0ne of the actions proposed by the European Union for implantation of Circular Economy underlines the use of waste as secondary raw materials (SRMs). This initiative will give a second life to waste that is initially destined for landfills. Likewise, this will reduce the consumption of natural resources, save energy, reduce materials costs and waste dumping.

This Topic includes:

- Recycled aggregates (RA)
- Construction and demolition waste (CDW)
- Recycled concrete aggregate (RCA)
- Mixed recycled aggregate (MRA)
- Recycled masonry aggregate (RMA)
- Non-conforming fly ash (Nc-FA) from coal-fired power plants
- Bottom ash as fine aggregate
- Biomass fly ash and biomass bottom ash
- Recovery filler (RF) from hot-mix asphalt (HMA) plants
- Recycled mining waste (RMW)
- Recycled steel slags
- Environmental risks of recycled aggregate concrete
- Electric arc furnace dust (EAFD)

2. New Trends in Thermal Insulation for Energy Efficient Buildings Design

Thermal insulation of the building envelope is a key aspect to reduce energy consumption and CO_2 emissions of the construction sector.

Studies on new energy efficient materials and innovative construction solutions aimed at design of Zero Energy Buildings are welcome.

This Topic includes:

- Energy balances in buildings and modeling predictive control
- New energy efficient building materials
- Efficient construction systems
- New materials in buildings and their impact on the energy consumption
- Building envelope materials and structure energy performance
- Life cycle energy efficiency of buildings and embodied energy
- Bioclimatic and ecological architecture
- Monitoring and analysis of environmental contaminant
- Sustainable city and regional development

3. **Energy Source and Renewable Energy**

One of the most important engineering problems at present is the growing consumption of energy in the world and its influence on the environment and climate change. Use of Renewable Energy and more efficient systems will allow to reduce this impact.

This Topic includes:

- Energy sources
- Renewable energy: wind power, solar energy, hydroelectricity, biomass, geothermal...
- Energy storage
- Energy saving
- Sustainable and efficient energy systems
- Heating, ventilation and air conditioner (HVAC) systems
- Domestic hot water (DHW) systems
- Policy and energy market
- Smart buildings
- Energy conversion systems
- Waste valorisation to energy
- Renewable energy investments

- Environmental protection technologies
- Bio-energy systems
- Clean production

4. Advanced Construction Materials

Today, the new construction materials are addressing aspects such as high strength and durability properties, alkaline activation, photocatalysis, self-cleaning and increased CO_2 capture.

This Topic includes:

- Advanced construction materials
- High perfomance concrete
- Carbon capture and storage
- Photocatalysis and self-cleaning materials.
- Alkali-activated cement and concrete

5. Clean Environment

As reported in many publications, improvements in buildings aiming to reduction of energy consumption, could result in decreasing of microclimate parameters. Therefore in times of high airtightness of constructions as well as not sufficient maintenance of HVAC systems, it is necessary to pay much more attention for solutions allowing to keep a proper level of indoor air parameters, especially in home and work environment, places were people spend most of their time.

This Topic includes:

- Monitoring of indoor air quality (IAQ) parameters
- Air pollution and control
- Emission sources
- Modelling
- Healthy homes

- Best practices for IAQ contractors
- Interaction between pollutants
- Outdoor versus indoor environmental pollution
- Ventilation and airtightness
- Health aspects of IAQ

Contributions

The program will consist of invited general lectures, selected topical lectures (15 min) and poster presentations (90 x 120 cm).

The International Scientific Committee (ISC) will select speakers to give topical lectures and for poster presentations. To allow the selection, one short communication (2 pages) is required.

The Conference proceedings with short communications will be refereed and published as a book or CD-ROM. The Organizing Committee (OC) will send the proceedings to all registered participants. For publishing paper in the proceedings it is necessary that at least one of the authors is registered and participates.

Selected best presentations will be recommended for publishing in Special Issues of *MDPI Energies* or *Environmental Science and Pollution Research* (ESPR) journals.

Languages conference: English and Spanish.

Registration Fee

Regular fee: **35 euros**

Student fee: **25 euros**

This fee includes: conference banquet, three coffee breaks, conference proceedings, documentation and a touristic visit for no inhabitants of Cordoba with previous confirmation in registration form.

International Conference on GREEN CONSTRUCTION

Deadline

Contribution Submission March 8th, 2019,

Registration: Mach 20th, 2019.

ISC will inform participants about accepted contributions before March 15th, 2019.

Contact

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