



INVITED SESSION SUMMARY

Title of Session: Cool and green solutions for urban heat island mitigation and energy efficiency in buildings

Name, Title and Affiliation of Chair:

Anna Laura Pisello, Assistant professor, University of Perugia (Italy)

Denia Kolokotsa, Associate Professor, Technical University of Crete

Details of Session (including aim and scope):

From its very beginning, urban systems have been responsible for both benefits of penalties due to anthropogenic actions. Some risks and potential vulnerabilities have been successfully handled while other new ones are increasingly making city citizens more vulnerable (Pain, Nature. 2016).

Anthropogenic heat release due to human activities, building operation, transportation dynamics and industrial processes represents one of the most urgent microclimate forcings affecting urban wellbeing and energy performance of buildings located within dense built environment. Such anthropogenic heat has been acknowledged to be responsible for Urban Heat Island (UHI) phenomenon, the best documented climate change related phenomenon consisting of urban overheating up to several Celsius degrees with respect to the green suburban belts. In this view, effective mitigation strategies have been proposed and investigated through numerical, experimental and analytical studies.

The purpose of this session is to build upon these recent findings in order to deal with the most innovative progress about cool and green solutions for energy efficiency in buildings and microclimate mitigation in urban areas.

More in details, original contributions are expected to deal with new materials and solutions for UHI mitigation, passive cooling strategies in indoor and outdoors, environmental comfort conditions in urban areas and, more in general, the variety of inter-building effects compromising environmental quality in the built environment.

Topics include, but are not limited to:

- UHI mitigation strategies
- Indoor-outdoor thermal comfort issues
- New materials and systems for passive cooling
- New applications of cool (highly reflective) materials and greenery for energy efficiency in buildings
- New case studies about cool and green solutions
- Inter-Building effects of cool and green solutions
- Social and behavioural implications of UHI
- People vulnerability to local climate change issues
- New strategies for urban resilience to climate change

Main Contributing Researchers / Research Centres (tentative, if known at this stage):

The target audience of the session consists of several researchers from Greece, Europe and all around the world seeking to investigate (i) energy efficiency in building through passive strategies, (ii) microclimate mitigation techniques, (iii) UHI related phenomena and social/behavioural implications.

Website URL of Call for Papers (if any):

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