

**Title:**

Energetic Aspects of Building Envelopes

**Organizers:**

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**Abstract:**

A worldwide increase in consumption of energy and resources, global warming, as well as the likewise increasing amounts of waste and emissions are central issues in our society today. In this context, the construction industry, the building sciences and also politics are called upon to develop and convey solutions in order to ultimately bring about significant improvements in all areas of construction. Here, the energetic aspects of building envelopes are of particular importance. Especially this part of buildings means large outdoor surfaces that are built for a long time use. This means a high potential for the saving of resources on the one hand, and a high potential for a long term use on the other. Lightweight structures, used as roof or facade, are ideally suited to avoid big amounts of non-renewable resources, waste and emissions during production, transport, operation and also during reuse and at the final disposal. Their long operating live under mostly predictable environmental conditions also enable the exploitation of renewable energies in the form of solar heat or solar electric power, but also the purification of drinking water or the cultivation of natural products by artificial photosynthesis. Such beneficial functions are made possible in addition to the actual tasks of building envelopes, like creating, enclosing or protecting virtual or real spaces. The invited session "Energetic Aspects of Building Envelopes" provides contributions from building professionals, planners and scientists who deal with lightweight structures in this sub-area of building. They will report about their challenges, experiences and pioneering solutions.