Editorial

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Multiphysics treat simulations that involve multiple physical models or multiple simultaneous physical phenomena. Applied multiphysics models have been developed during the last years to better simulate the behavior of complex processes. This evolution is also driven by the need to improve the understanding of real physical phenomena in order to develop and design buildings and systems which are more comfortable, economical and environmentally friendly. The advances in computer hardware and software packages provide access to Multiphysics modeling for a great number of people. There is now a large number of science and engineering communities whose research is being customized towards Multiphysics software. Although these communities have been publishing their research outcomes in various scientific platforms, the availability of studies involving building simulation is still limited. The aim of this issue is therefore to provide some background knowledge about Multiphysics modeling and its applications to building simulation.

The special issue includes seven papers. The topics of the papers included in the issue are: (i) hospital ventilation and the potential exposure to contaminants; (ii) the indoor air quality in a movie theatre equipped by different ventilating systems; (iii) indoor contaminant dispersion; (iv) a heat emitting system for buildings; (v) heat, air and moisture transport in building constructions; (vi) determination of indoor humidity using a whole-building hygrothermal model; (vii) set point control for air heating related with mechanical stress in wood. Although the diversity of subjects is quite high, they are all modeled in the same Multiphysics software package (COMSOL). This opens the possibilities to build even more complex models.

It is an honor to be invited to edit this special issue for *Building Simulation: An International Journal*. I would like to thank the following people who made this special issue possible: the Editor-in-Chief Dr. Xudong Yang for his support, the reviewers for improving the quality of the papers and last but not least the authors for their contributions.