

Advanced Research on Airflow and Pollutant Dispersion in Building Systems

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Deadline for manuscript
submissions:

closed (15 December 2022)

Message from the Guest Editors

With the global trend towards increasing urbanization, a great deal of attention has been paid to the deterioration of the urban environment, including the airflow and pollution dispersion around buildings, building arrays, specific building structures (tunnels and underground spaces), and street canyons. Air pollution represents a threat to the physical and mental health of pedestrians and people indoors on both sides of street canyons. Urban environment control and design have become important directions of urban construction and development. Field measurements, wind tunnel or scaled-model experiment, and numerical simulations are widely used for analyzing the urban atmospheric environment.

Research papers related to **airflow and pollutant dispersion in building systems** are welcomed, including but not limited to :

- Indoor and outdoor environment quality
- Natural ventilation of buildings
- Building environment simulation
- Pollutant dispersion
- Smoke movement
- Tunnel ventilation
- Air Exchange
- Dispersion of harmful chemicals



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Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

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