Special Issue

Shallow Geothermal Energy in Densely Inhabited Areas

Message from the Guest Editors

Shallow geothermal energy has great potential to avoid pollutant emissions and to reduce the operational costs related to heating and cooling services in buildings. These characteristics make this technology very interesting for large-scale applications in urban areas, as demonstrated by the expansion of open-loop systems (groundwater heat pumps) in several European cities. However, this also poses challenges, since shallow geothermal energy is a limited resource that must be properly managed, especially in areas with a high-density heating and/or cooling demand. The focus of our Special Issue is to provide a platform to discuss the modelling, design and management of shallow geothermal energy in densely inhabited areas. This topic involves many scientific disciplines, including—but not limited to—energy engineering, heat transfer, geology, hydrogeology, chemistry, and economy. Keywords:

- shallow geothermal energy
- ground-source heat pumps
- subsurface urban heat island
- thermal plume
- underground thermal energy storage
- ground-source district heating and cooling system

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Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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