Special Issue

Mathematical Modeling of Fluid Flow and Heat Transfer in Petroleum Industries and Geothermal Applications 2020

Message from the Guest Editor

Geothermal energy is the thermal energy generated and stored in the Earth's core, mantle and crust. Geothermal technologies are used to generate electricity and to heat and cool buildings. To develop accurate models for heat and mass transfer applications involving fluid flow in geothermal applications or reservoir engineering and petroleum industries, a basic knowledge of the rheological and the transport properties of the materials involved (for example, drilling fluid, rock properties, etc.), especially in high-temperature and high pressure environments, are needed. In this Special Issue, all aspects of fluid flow and heat transfer in geothermal applications, including the ground heat exchanger, conduction and convection in porous media are considered. The emphasis here will be on mathematical and computational aspects of fluid flow in conventional and unconventional reservoirs, geothermal engineering, fluid flow and heat transfer in drilling engineering and enhanced oil recovery (hydraulic fracturing, Steam-assisted gravity drainage (SAGD), CO2 injection, etc.) applications. Contributions in all these areas are welcome.

Guest Editor

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Deadline for manuscript submissions

closed (31 December 2020)

Energies

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/si/37095

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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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