Special Issue

Multiscale and Multidisciplinary Studies of Gas Hydrate Formation, Dissociation and Dissolution Processes

Message from the Guest Editors

Natural gas hydrates and their associated free gas accumulations represent a significant source of natural gas. Hydrates have the potential to help underpin the transition to cleaner energy, either as a source of energy by itself, or as a target for CO2 storage combined with the release of natural gas. The combination of the latter option with known technology for steam cracking of hydrocarbons allows for H2 to be delivered energy.

Typically, hydrate formation in the sediments affects the geophysical, hydro-mechanical and geochemical properties of the host sediments. The extent of changes in geophysical properties due to hydrates depends, however, on the amount and distribution of the hydrates. It is, however, difficult to make substantial further progress without a higher degree of interdisciplinary scientific work than what has been achieved up to now.

There is also a need for a deeper understanding on how the technical feasibility of the various hydrate dissociation methods are controlled by thermodynamic laws, and on couplings to various levels of flow. The primary goal is the safe and sustainable production of energy from hydrates at commercially feasible costs.

Guest Editors

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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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