

Preface

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It is with great excitement to start the new decade with the publication of the first issue of Energy Systems. Undoubtedly, energy research has been expanding in all directions at an astonishing rate.

Rapid growth of energy consumption within existing infrastructure is incompatible with the sustainable development of the mankind.

Existing level of CO₂ emissions leads to inevitable ecological catastrophe which is human made. On the other hand the humanity is facing a major rapid exhaustion of fossil sources of energy. It is estimated that total energy supply may shrink up to one fifth of current supply in several decades. Thus, the XXIst century is often considered as the age of energy.

Inevitable transformations of energy industry require nontrivial engineering solutions in transportation, building design and renovation, industry, power generation and transmission, as well as energy systems expansion. Researchers of different fields are seeking new solutions for generating and storing energy, creating smart grids, building energy efficient houses and manufacturing. These solutions require non trivial mathematical modeling and developing fast large scale stochastic optimization and simulation algorithms. The first issue of the journal covers a wide range of research in energy systems.

We would like to take this opportunity to thank Dr. Werner Mueller of Springer for helping us establishing the new journal and all members of the editorial board for their enthusiasm and work. Welcome to the first issue of Energy Systems!

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