Call for Book Chapter Proposals for

Food-Energy-Water Nexus: Resilience and Sustainable Development

Decision-Making Methods, Planning, Algorithms, and Trade-Off Analysis

Book Title

Food-Energy-Water Nexus: Resilience and Sustainable Development

Publisher: Springer

Synopsis

The increasing costs of energy and water, fossil fuel depletion, and food shortages caused by climate change have left us with no choice but to accelerate the world's transition to sustainability. In the coming decades, we are likely to see increasing pressure on the food, energy, and water (FEW) demands from increasing population and rising threat on the FEW supplies from climate change. As discussed in a recent report published by the International Renewable Energy Agency (IRENA), patterns of FEW systems are changing and the move to more sustainable supply systems may be inevitable. Increasing populations as well as resource scarcity challenge long-term FEW systems sustainability. Previously, many researchers had studied and analyzed sustainability across the FEW sectors in a fragmented and isolated way. Recent studies show that FEW systems are highly interconnected, and improving system function while ensuring sustainability cannot be borne by research on food, energy or water systems individually. More nexus-wide research is needed to pursue both understanding the behavior of FEW systems and developing technological enablers necessary to improve the system performance.

Book contents

We welcome book chapter contributions centered (but not exclusively) on the following themes: Authors are welcome to propose a new book chapter title related to the book topics.

Potential topics include but are not limited to the following:

- Introduction to FEW nexus
- Resiliency and sustainability definition in FEW systems
- Planning of Interdependent Energy, water and food systems.
- Decision-making tools for optimal operation of FEW systems
- Modeling of EW and FEW systems
- Sustainable design of EW and FEW systems
- Sustainable operation of EW and FEW systems
- Impact of renewable energy resources in EW and FEW systems
- Renewable energy based water desalination systems
- Net zero energy buildings: design and operation
- Net zero water and waste buildings: design and operation
- Renewable energy systems for agriculture applications
- Security interactions of Food, Water and Energy systems
- Challenges and opportunities of FEW nexus in the sustainable development of different countries
- Impact of FEW nexus perspectives on managing agricultural droughts
- An integrated modeling approach for FEW nexus management

Important Dates:

December 25, 2018: Book Chapter Proposal

January 25, 2019: Accept/Reject Notification

May 30, 2019: Full Chapter Submission

July 15, 2019: Accept/Revise/Reject Notification

August 30, 2019: Revised chapter Submission

December 1, 2019: Final Print Version Available (Tentative)

Editors

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Please send your inquiries and book chapter proposals (Abstract of the proposed book chapter, tentative sections and subsections of the chapter) to Somayeh Asadi and Behnam Mohammadi-ivatloo: asadi@engr.psu.edu, bmohammadi@tabrizu.ac.ir