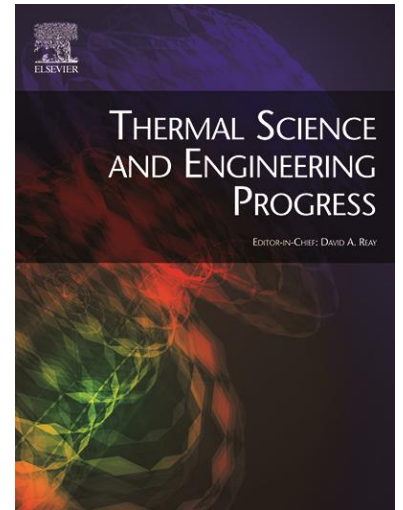


# Thermal Science and Engineering Progress

## Call for Papers: Special Issue on Thermal Energy Usage in the Agricultural Sector

### Edited by

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In recent years, food production from farm to fork has gained significant attention due to concerns of feeding a growing global population and depletion of fossil energy sources and deforestation. Many on and off farm operations within the food chain are characterised by a significant thermal energy demand. Prominent examples are climate control operations in intensive animal farming, on-farm drying operations, milk cooling on dairy farms, thermal food processing operations, cleaning operations etc. Simultaneously, in many countries anaerobic digestion systems are producing significant amounts of waste heat which is only rarely utilised.

While some effort has been put into the optimisation of energy usage of these processes and replacement of traditional energy sources by renewable ones, more systemic approaches and reliable prediction of the (positive) impacts of changes to the system on the overall performance are still lacking.

This special issue of *Thermal Science and Engineering Progress* focuses on the diagnostics of thermal energy usage in agricultural operations on farm and in food processing, optimisation of energy demands, integration of renewable energy sources, process-product interaction determination and innovation in the field of smart processing. The intention of this special issue is to focus on the most recent advances in research topics that include but are not limited to:

- Hybrid solar drying systems (e.g. with thermal storage) for continuous drying of agricultural products at steady and moderate temperatures. Here the point of interest will be systems and components, energy audit, thermophysics of various agricultural products etc.
- Smart drying systems.
- Smart environmental control systems (heating, cooling etc.) in greenhouses and livestock houses - design, energy performance, modelling tools, plant/or animal performance, etc.
- Computer-based methodology for modelling and optimization of energy usage in agriculture and food processing.
- Novel techniques (including the use of camera and sensors) to measure energy in agriculture.
- Novel techniques for process-product interaction analysis and the development of smart processing systems, simultaneously reducing resource demands and increasing product quality.
- Engineering-based techniques for design of agricultural machinery for better energy management.
- Economic aspects associated with optimization of energy usage in agriculture.

## Submission guidelines:

Research articles must not have been published or submitted for publication elsewhere. All articles will be peer reviewed and accepted based on quality, originality, novelty, and relevance to the special issue theme. Before submission, authors should carefully read the journal's Author Guidelines, which are available at <https://www.elsevier.com/journals/thermal-science-and-engineering-progress/2451-9049/guide-for-authors>

Manuscripts must be submitted online at: <https://www.evise.com/profile/#/TSEP/login> by selecting “SI-Agri” from the “Issues” pull-down menu during the submission process.

## Schedule:

- Submission deadline: 1 January 2019
- 1st Round Notification: 1 March 2019
- Revised papers due: 1 May 2019
- 2nd Round Notification: 1 June 2019
- Final Notification: 1 August 2019
- Final paper due: 15 Sept 2019
- Publication: Papers will be published in a standard volume of *Thermal Science and Engineering Progress* as soon as they are accepted. They will also be compiled in the online Special Issue at <https://www.sciencedirect.com/journal/thermal-science-and-engineering-progress/special-issues>. The full issue will be compiled by: 31 December 2019

## About *Thermal Science and Engineering Progress* Editor in Chief: David Reay

Launched in 2017, *Thermal Science and Engineering Progress* publishes original, high-quality research articles that span activities ranging from fundamental scientific research and discussion of the more controversial thermodynamic theories, to developments in thermal engineering that are in many instances examples of the way scientists and engineers are addressing the challenges facing a growing population – smart cities and global warming – maximising thermodynamic efficiencies and minimising all heat losses. It is intended that these will be of current relevance and interest to industry, academia and other practitioners.

The range of topics covered by *Thermal Science and Engineering Progress* addresses the rapid rate of development being made in thermal transfer processes as they affect traditional fields, and important growth in the topical research areas of aerospace, thermal biological and medical systems, electronics and nano-technologies, renewable energy systems, food production (including agriculture), and the need to minimise man-made thermal impacts on climate change.

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