

# Tentative Outline

## Special Thematic Issue for the journal

### Effective Utilization of Low-grade Thermal Energy base on Organic Rankine Cycle (ORC)

Guest Editors: Zhen Yang

#### • Scope of the Thematic Issue:

Organic Rankine cycle (ORC) is a promising heat-power conversion technology for renewable energy development and waste heat recovery. The fundamental study and engineering application of ORC systems have continuously increased in recent years. This Thematic Issue will highlight the scientific advancements and technological development on ORC technology, and it will provide critical analysis on the current status and future opportunities of this emerging field. We invite researchers to submit their high-quality review that discuss potential applications, cycle improvement, working fluid selections, critical component design and optimization, as well as advanced operation strategy.

**Keywords:** 6 to 8 keywords should be provided.

Low-grade Thermal Energy; Organic Rankine Cycle; ORC; Waste Heat Recovery; Renewable energy; Heat-power Conversion

#### Sub-topics:

The sub-topics to be covered within the issue should be provided:

- Renewable energy development and waste heat recovery base on organic Rankine cycle.
- Cycle design, improvement approaches and advanced structures (i.e., multi-pressure evaporation).
- Eco-friendly organic fluids and mixtures.
- Design and optimization of turbines and volumetric expanders.
- Application and optimization of effective heat exchangers.
- Off-design performance analysis and advanced operation strategy.
- Experimental data and operational experience.

#### Tentative titles of the articles and list of contributors:

Tentative titles of the articles and list of contributors with their names, designations, addresses and email addresses should be provided.

- Economic survey and evaluation of organic Rankine cycle for low-grade thermal energy.  
*Sylvain Quoilin. Thermodynamics Laboratory, University of Liege, Belgium. [squoilin@ulg.ac.be](mailto:squoilin@ulg.ac.be)*
- Renewable energy development and waste heat recovery using organic Rankine cycle.  
*Bertrand F. Tchanche. Département de Physique, Université Alioune DIOP de Bambey, Senegal. [tfb@aua.gr](mailto:tfb@aua.gr)*
- Advanced cycle structures and improvement approaches of organic Rankine cycle.  
*Steven Lecompte. Department of Electrical Energy, Metals, Mechanical Construction and Systems, Ghent University, Belgium. [steven.lecompte@ugent.be](mailto:steven.lecompte@ugent.be)*
- Eco-friendly organic fluids used in organic Rankine cycle.  
*Giovanni Manente, Department of Industrial Engineering, University of Padova, Italy. [giovanni.manente@unipd.it](mailto:giovanni.manente@unipd.it)*
- Review on the organic Rankine cycle using zeotropic mixtures.  
*Florian Heberle. Department of Engineering Thermodynamics and Transport Processes, University of Bayreuth, Germany. [florian.heberle@uni-bayreuth.de](mailto:florian.heberle@uni-bayreuth.de)*
- Design and optimization of turbines and volumetric expanders for organic Rankine cycle.  
*Kiyarash Rahbar. University of Birmingham, England. [kxr965@alumni.bham.ac.uk](mailto:kxr965@alumni.bham.ac.uk)*
- Theory limit and implementation methods for organic Rankine cycle driven by low-grade thermal energy.

*Li Zhao. Department of Mechanical Engineering, Tianjin University, China. [jons@tju.edu.cn](mailto:jons@tju.edu.cn)*

- Off-design performance of organic Rankine cycle driven by waste heat of engines.

*Enhua Wang. School of Mechanical Engineering, Beijing Institute of Technology, China. [wangenhua@bit.edu.cn](mailto:wangenhua@bit.edu.cn)*

- Selections and optimization of effective heat exchangers for organic Rankine cycle driven by low-temperature heat sources.

*Xianglong Luo. Department of energy engineering, GuangDong University of Technology, China. [xl-dte@gdut.edu.cn](mailto:xl-dte@gdut.edu.cn)*

- Advanced operation strategy and multi-objective optimization for organic Rankine cycle.

*Fateme Ahmadi Boyaghchi. Department of Mechanical Engineering, Faculty of Engineering & Technology, Alzahra University, Iran. [aboyaghchi@gmail.com](mailto:aboyaghchi@gmail.com)*

#### **Schedule:**

- ✧ Thematic issue submission deadline:

Submission open: 1 January 2020

Submission deadline: 31 July 2020

Acceptance deadline: 31 December 2020

#### **Contacts:**

*Guest Editor Name: Zhen Yang*

*Affiliation: Department of Energy and Power Engineering, Tsinghua University*

*Email: [zhenyang@tsinghua.edu.cn](mailto:zhenyang@tsinghua.edu.cn)*