

CALL OF PAPERS
Journal of Low Frequency Noise, Vibration and Active Control
(<http://www.multi-science.co.uk/lowfreq.htm>)

Special Issue on Thermoacoustics and its Control

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Objective

Unsteady heat release is an efficient monopole-like sound source. A thermal flux may cause acoustic oscillations, when some conditions are properly satisfied. The heat-to-sound or vice versa conversion mechanism (known as thermoacoustics) has fascinated scientists for many years due to its practical applications. The heat-driven acoustic oscillations are desired in thermoacoustic engine/cooler systems. However, they are undesirable in many other low emission combustion systems, such as land-based gas turbines, aero-engines (afterburners), ramjets, boilers and furnaces, since it may cause flame extinction, structural vibration, flame flashback and even structural damage. For adoption to different applications, heat-to-sound (thermoacoustic) conversion needs to be optimized.

The objective of the special issue is to address the technical challenges in finding the control solutions applicable to different types of thermoacoustic systems. The focus is on technology solutions relevant to power generation optimization and propulsion system stabilization through the use of active, passive or other alternative control approaches in the context of thermoacoustic systems. In enhancing the quest for practical technology solutions, the role of actuation power, environmental impact of thermoacoustics and economic analysis of control approaches will also be explored.

Scope

Prospective authors are encouraged to consider the following non-exhaustive list of topics as a guide to submit their work for possible publication in this issue

- Active/semi-active control of combustion/thermoacoustic instability
- Adaptive control of thermoacoustic instability
- Energy harvesting from thermoacoustic systems
- Experimental, numerical or theoretical investigation of thermoacoustic systems
- Feedback control of thermoacoustic instability
- Flame response to low-frequency sound
- Heat/combustion-driven acoustics
- Mode-based control of thermoacoustic instability
- Passive/semi-passive control of thermoacoustic instability by using acoustic dampers such as Helmholtz resonators, perforated liners, or by injecting air flow, etc.
- Thermoacoustic/combustion instability
- Thermoacoustics cooler/heat pump
- Thermoacoustics prime mover
- Thermodynamic analysis of thermoacoustic systems

Submission/acceptance schedule

All papers submitted for consideration with view of publication in this issue will be subject to the normal peer review process of the Journal of Low Frequency Noise, Vibration and Active Control. It is envisaged that accepted papers will be published in the March 2015 issue of the journal. Prospective authors are advised to adhere to the following schedule

- 15 August 2014: Deadline for submission of initial 500 words abstract of intended paper
- 01 September 2014: Notification of acceptance of abstract and invitation for submission of full paper
- 15 October 2014: Deadline for submission of full paper
- 19 December 2014: Notification for acceptance of paper

Submission of papers

Authors are advised to consult the guide to authors on the journal's web-site at (<http://www.multi-science.co.uk/lowfreq.htm>) for preparation of their paper.

Authors are further advised to submit the initial 500-words abstract of their intended paper to the Guest co-Editor at (zhaodan@ntu.edu.sg), and if invited for full-paper submission to submit their full paper to the Editor-in-Chief of the journal either via the journal's web-site or directly at (o.tokhi@sheffield.ac.uk) according to the key dates above.

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