

OS22: Fundamentals and Applications of Thermoacoustics

November 12, 2025

EX-4B

- OS22-1 **On the Progress of Some Fundamentals and Prototypes of Thermoacoustic/Stirling Heat Engines and Refrigerators at TIPC-CAS** (*Invited*)
10:45-12:00 Ercang Luo (Chinese Academy of Sciences / University of Chinese Academy of Sciences, China), Jianying Hu, Zhanghua Wu, Yanyan Chen, Liming Zhang, Yanlei Sun, Xiaotao Wang, Rui Yang (Chinese Academy of Sciences, China)
- 12:15-13:30 BREAK
- OS22-2 **Equivalent Load Analysis Using Orifice Plate in Liquid Piston Stirling Engine Loaded with Self-Rectifying Turbine**
13:30-13:45 Jidai Tomihira, Hiroki Kusudo, Eita Shoji, Tetsushi Biwa (Tohoku University, Japan), Prastowo Murti (Universitas Gadjah Mada, Indonesia), Shinya Okuhara, Manabu Takao (National Institute of Technology, Matsue College, Japan)
- OS22-3 **Evaluation of Minor Losses in Oscillatory Liquid Metal Flow through a U-Tube with a Rectangular Section**
13:45-14:00 Wei-Cheng Lyu, Shu-Han Hsu (National Taipei University of Technology, Taiwan)
- OS22-4 **Acoustic Impedance Measurement of a Water Pumping Line Driven by Oscillatory Flow**
14:00-14:15 Chun-Yu Wang, Shu-Han Hsu, Yi-Hsuan Lu (National Taipei University of Technology, Taiwan)
- OS22-5 **Numerical Study of a Pulse Tube Cooler Driven by a Liquid-Piston Stirling Engine**
14:15-14:30 Prastowo Murti (Universitas Gadjah Mada, Indonesia), Tetsushi Biwa (Tohoku University, Japan)
- OS22-6 **Numerical Simulation of a kW-class Beta-Type Stirling Heat Pump Based on a CFD Model**
14:30-14:45 Huan-Wen Chiu, Sin-Ying Shen, Hang-Suin Yang (National Chung Cheng University, Taiwan)
- OS22-7 **Analysis on Ultra-High Temperature Heat-Driven Thermoacoustic Heat Pump**
14:45-15:00 Yupeng Yang, Tianqi Wu, Yiwei Hu, Hao Chen (Chinese Academy of Sciences / University of Chinese Academy of Sciences, China), Rui Yang (Chinese Academy of Sciences, China), Ercang Luo (Chinese Academy of Sciences / University of Chinese Academy of Sciences, China)
- 15:00-15:15 BREAK
- OS22-8 **Entropy Generation During Energy Conversion in Phase-Change Thermoacoustic Devices**
15:15-15:30 Alina Lemster, Nathan Blanc, Guy Z Ramon (Technion, Israel)

- OS22-9
15:30-15:45 **Acoustically Induced Mass Transfer in the Wet Stack of a Standing-Wave Thermoacoustic Cooler**
Satoshi Sekimoto (Tokai University, Japan), Hiroki Izumi, Yuki Ueda (Tokyo University of Agriculture of Technology, Japan)
- OS22-10
15:45-16:00 **Performance of a Transcritical CO₂ Standing-wave Thermoacoustic Engine with Multisection Wire Mesh Stacks**
Yachun Chen, Tao Jin (Zhejiang University, China)
- OS22-11
16:00-16:15 **A Novel Supercritical CO₂ Thermoacoustic Pump: Flow Rate Modeling and Enhancement**
Shaowu Yue, Zhan-chao Hu (Sun Yat-sen University, China)
- OS22-12
16:15-16:30 **Investigation of Thermoacoustic Separation of Helium–Argon Mixture in Stack**
Mushi Li, Seiju Murakami, Hiroki Kusudo, Tetsushi Biwa, Eita Shoji (Tohoku University, Japan)
- OS22-13
16:30-16:45 **Effect of Acoustic Impedance Boundary Conditions on Thermoacoustic Gas Mixture Separation in a Narrow Tube**
Takeru Otomo (Tokyo University of Agriculture and Technology, Japan), Satoshi Sekimoto (Tokai University, Japan), Yuki Ueda (Tokyo University of Agriculture and Technology, Japan)

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- OS22-14
9:15-9:30 **Estimating Amplitude Saturation in a Standing-Wave Thermoacoustic Engine with Nonlinear Friction Losses**
Shu-Han Hsu, Yu-Chiao Peng (National Taipei University of Technology, Taiwan)
- OS22-15
9:30-9:45 **Oscillation Characteristic of Electricity-Feedback Traveling-Wave Type Thermoacoustic Generator based on a Four-Terminal Network Analysis**
Yasuhide Kobayashi (Nagaoka University of Technology, Japan)
- OS22-16
9:45-10:00 **Heat Transfer Characteristics of Tubular Heater with Spiral Fins Under Oscillatory Flow in Stirling Engine**
Qingyue Jin, Haojie Sun, Wang Xiao (Chinese Academy of Sciences / University of Chinese Academy of Sciences, China), Yangbin Cheng, Ying Ma, Guoyao Yu (Chinese Academy of Sciences / Institute of Optical Physics and Engineering Technology, China), Ercang Luo (Chinese Academy of Sciences / University of Chinese Academy of Sciences, China)
- OS22-17
10:00-10:15 **Research on the Enhanced Heat Transfer Performance of Tear-Drop Structures Under Alternating Flow in Stirling Engines**
Wang Xiao (Chinese Academy of Sciences / University of Chinese Academy of Sciences, China), Guoyao Yu (Chinese Academy of Sciences / Qilu Zhongke Optics and Engineering Technology Research Institute, China), Ercang Luo (Chinese Academy of Sciences / University of Chinese Academy of Sciences, China)
- OS22-18
10:15-10:30 **Study of the Thermoacoustic Effects in a Single-Piston Stirling Engine**
Yen-Cheng Lin, Pin-Hong Yang, Hang-Suin Yang (National Chung Cheng University, Taiwan)

- 10:30-10:45 **BREAK**
- OS22-19
10:45-11:00 **Linear Stability Analysis of a Combustion Oscillation System with a Delayed Feedback Tube**
Yosuke Takabatake, Hiroki Kusudo, Eita Shoji, Tetsushi Biwa (Tohoku University, Japan)
- OS22-20
11:00-11:15 **Amplification of Self-Excited Acoustic Oscillations in Standing-Wave Thermoacoustic Engines**
Lihui Gu, Kai Wang, Yue Zhang, Geng Chen (Southeast University, China)
- OS22-21
11:15-11:30 **Investigation of Acoustic Power Amplification Mechanisms and Performance Enhancement in Thermoacoustic Amplifiers**
Wenpeng Sun (The University of Auckland, New Zealand), Geng Chen (Southeast University, China), Lihua Tang, Kean C. Aw (The University of Auckland, New Zealand)
- OS22-22
11:30-11:45 **Experimental Study of Cavity Tone with a Heated Honeycomb Stack**
Yuka Hosoya, Takashi Kuraishi, Hiroshi Yokoyama (Toyohashi University of Technology, Japan)