



RESEARCH OPPORTUNITY



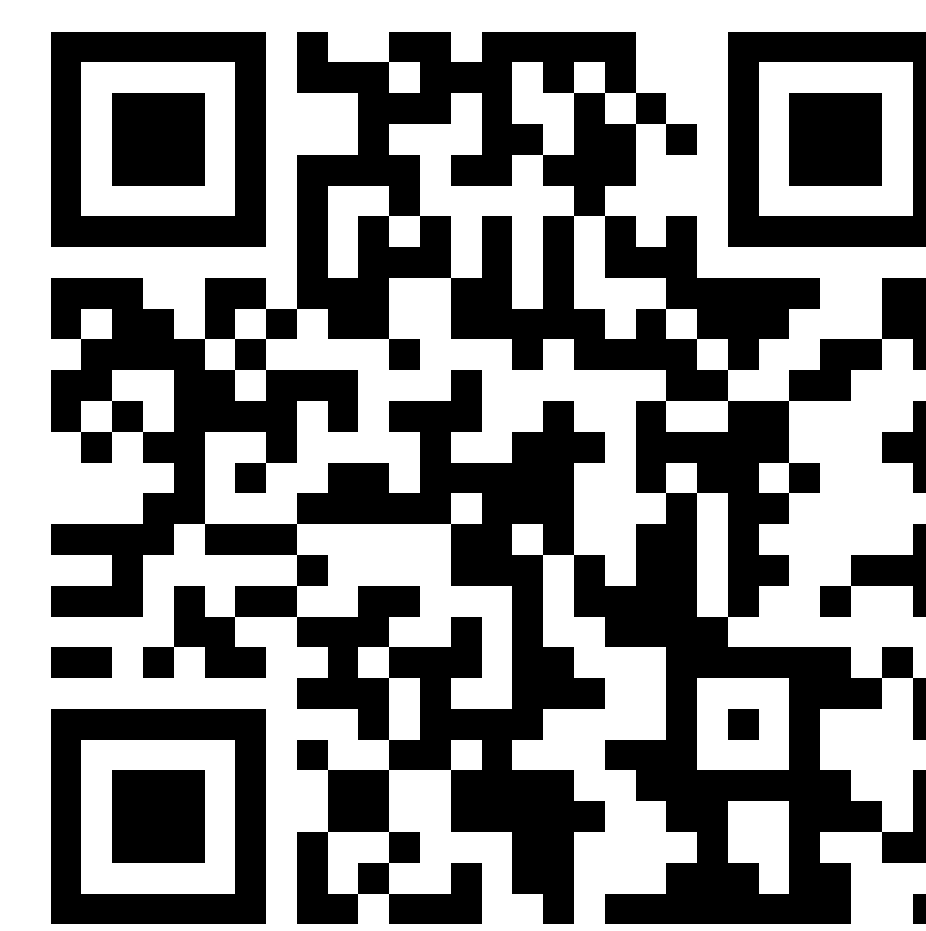
Turbomachinery & Heat Transfer Laboratory Looking for B.Sc. / M.Sc. / Ph.D. Students

The Turbomachinery and Heat Transfer Laboratory of Technion's Aerospace Engineering Faculty is the main Israeli academic entity for gas turbine and jet engine relevant research.

The activities of the laboratory are supervised by Assoc. Prof. Beni Cukurel. The laboratory aims to conduct cutting-edge studies and advanced development in the field of gas turbines for propulsion and power generation applications, while mainly focusing its efforts on the hot gas section, consisting of the combustor and the turbine. The scientific contributions are primarily applicable towards small scale engines, which are commonly used in distributed power generation, business jets, unmanned air vehicles, auxiliary power units and marine applications.

The research group currently includes 4 engineers, 2 technicians, 3 post-doctoral fellows, 8 graduate students, 5 undergraduate research assistants and laboratory administrator.

Our research activities are supported by a vast range of laboratory equipment including a custom screw compressor, 65kW micro turbine generator, turbine development and test facility, additive manufacturing and balancing tools, advanced measurement instrumentation (IR, PIV, Hot-Wire) and numerous state-of-the-art research facilities. Many of the conducted studies are done in collaboration with local and international partners from the industry, research institutes and universities and are funded by organizations such as the EU and local and foreign government bodies.



Assoc. Prof. Beni Cukurel

Biographical Data

- Ph.D - 2012, von Karman Institute for Fluid Dynamics and Purdue University, School of Mechanical Engineering;
- M.S.M.E - 2008, Purdue University, School of Mechanical Engineering
- B.S.M.E - 2005, Purdue University, School of Mechanical Engineering

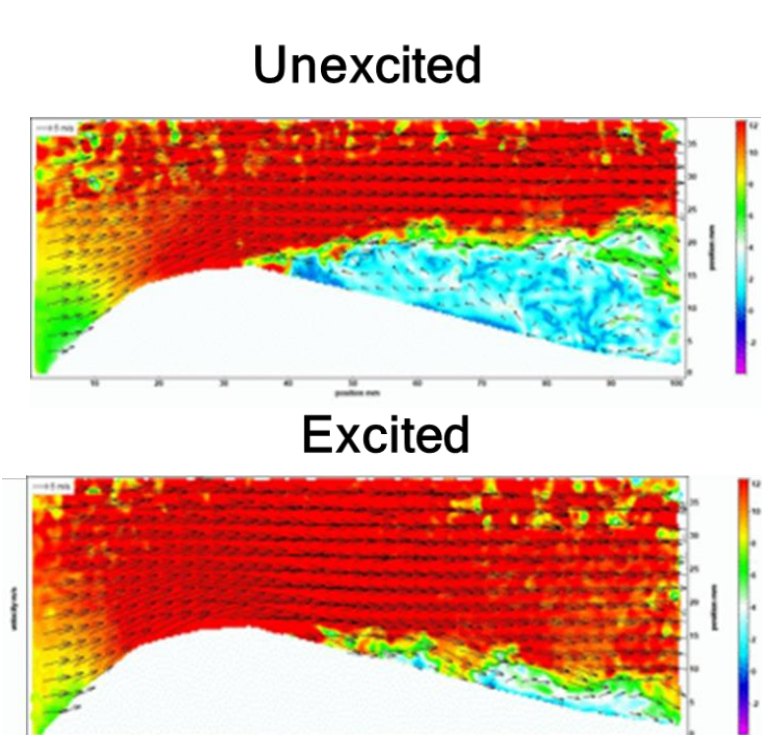
Main Research Interests:

- *Gas Turbine Component Analysis:* Turbine Cooling and External Flows, Aero-thermal Design of Gas Turbine Hot Gas Section, Axial and Radial Compressor/Turbine Aerodynamics
- *Basic and Applied Heat Transfer:* Thermo-Acoustic Interaction, Heat Transfer Modelling, Heat Transfer Enhancement, Thermal Management.
- *Measurement Technique Development:* Infrared Thermography, Liquid Crystal Thermometry, Particle Image Velocimetry, Hotwire Anemometry.

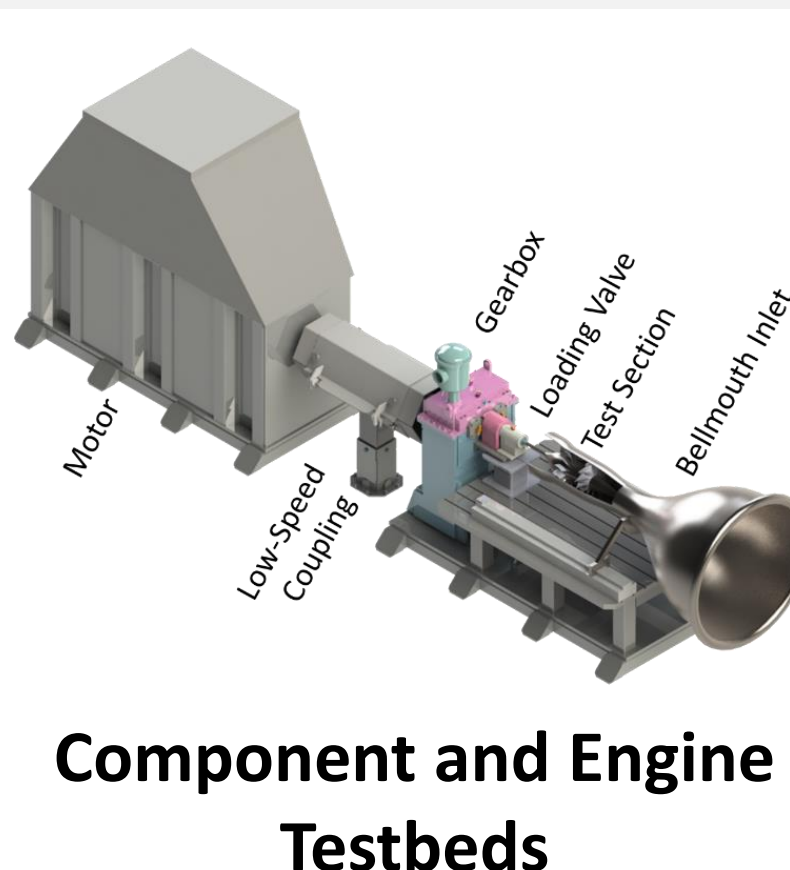
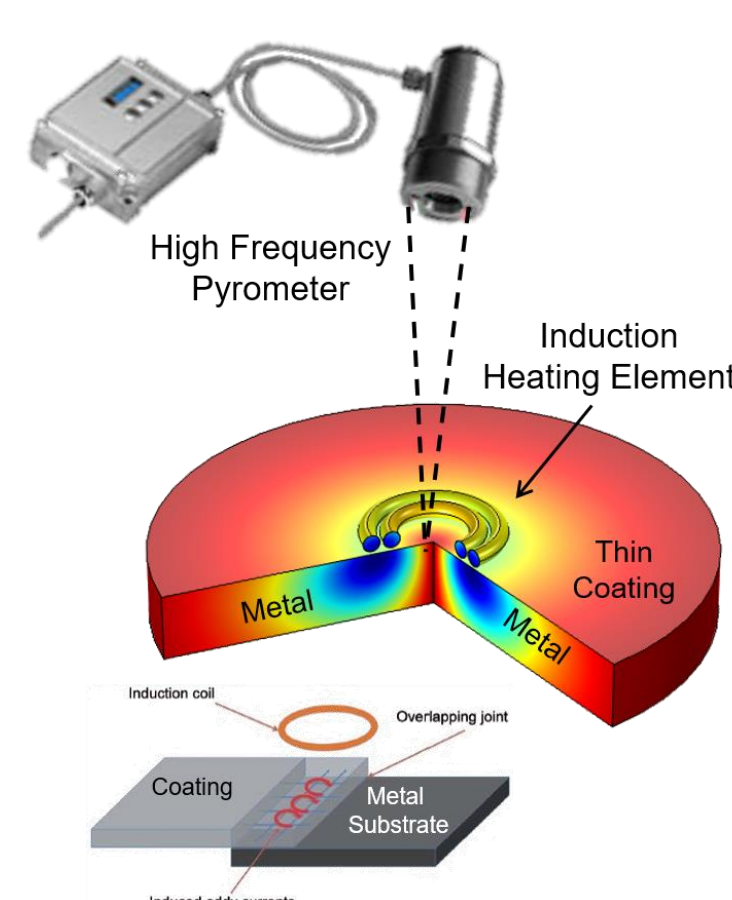
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Acoustic Flow Control

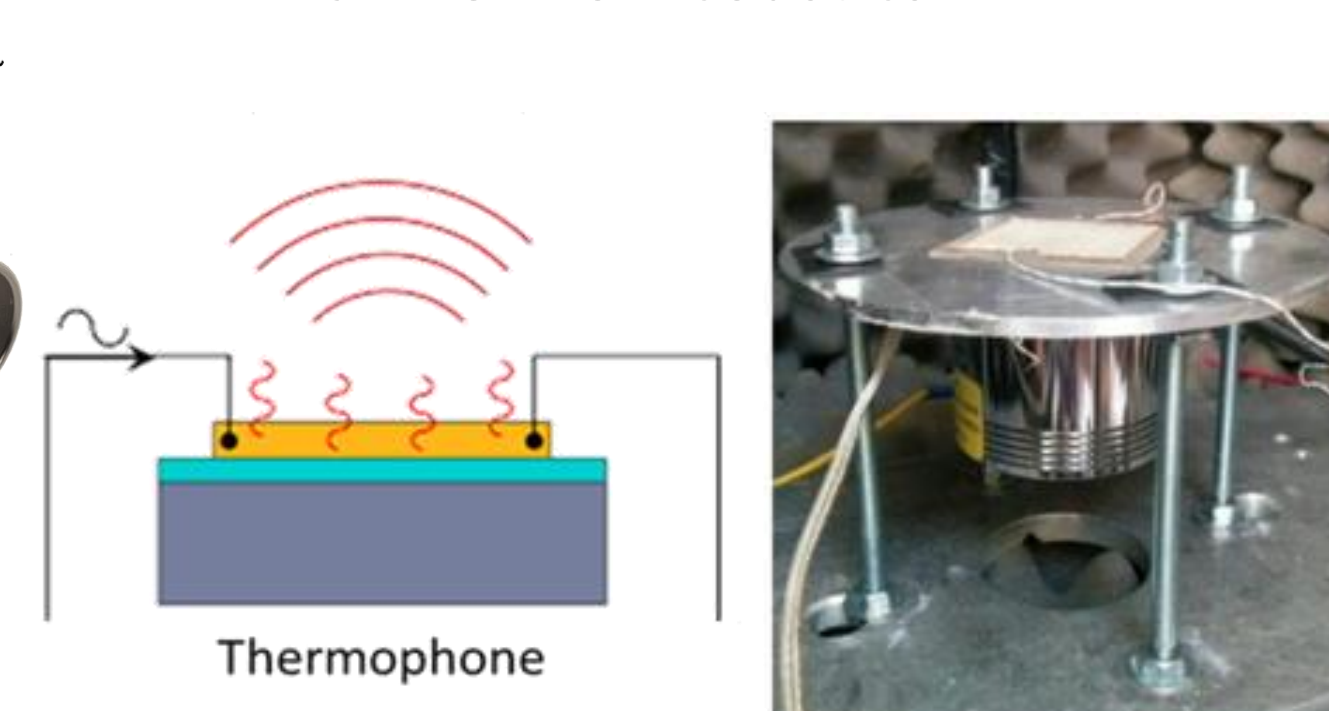


Induction Phase Radiometry

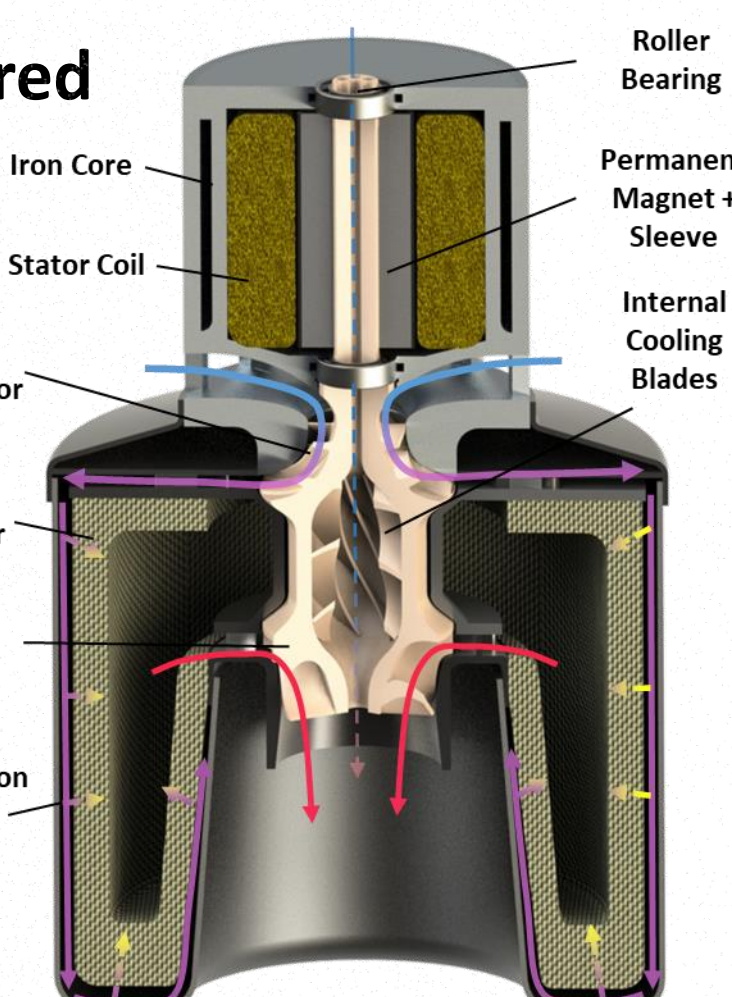


Component and Engine Testbeds

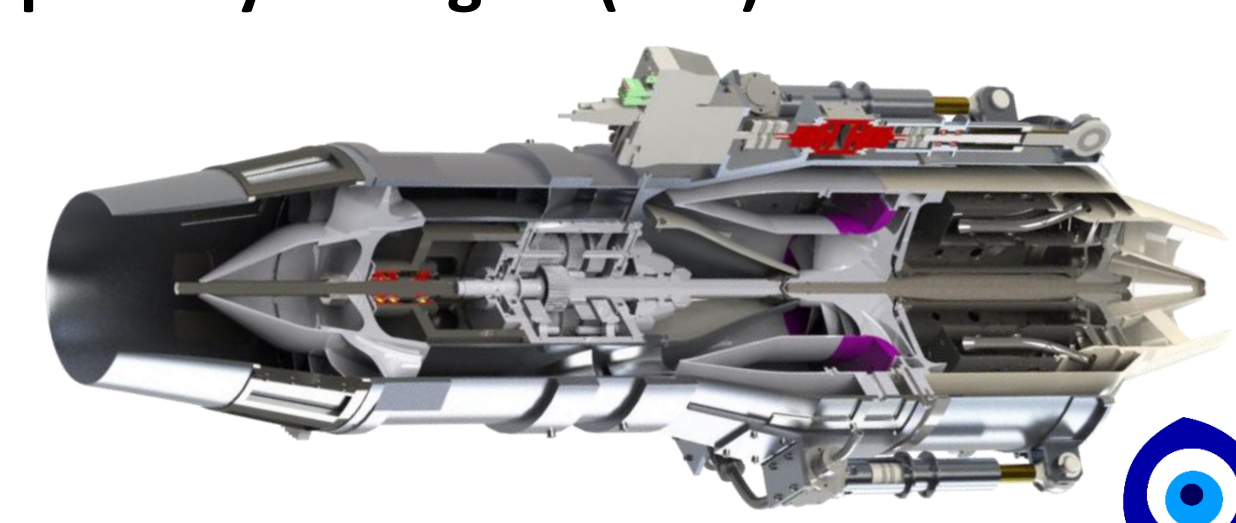
Active Noise Cancellation via Thermo-Acoustics



Additively Manufactured Ultra-Micro Gas Turbine



Adaptive Cycle Engine (ACE)



Turbine Research Facilities