

# 18<sup>th</sup> ISRAELI SYMPOSIUM ON JET ENGINES & GAS TURBINES

November 28<sup>th</sup>, 2019 | Aerospace Faculty

## TECHNICAL PROGRAM

Auditorium 235, Faculty Aerospace Engineering, Technion

08:30 REGISTRATION  
 09:30 Opening: **Professor Emeritus Yeshayahou Levy** Chairman, Faculty of Aerospace Engineering, Technion.  
**Professor Itschak Frankel** Dean, Faculty of Aerospace Engineering, Technion

**Major Yigal Ben Shabat** Head of Propulsion Systems Branch, Aeronautical Division, MOD/MFAT

09:50 FIRST SESSION  
 Session Chairman: **Lt. Col. Avraham Yosfan, Engineering Group Leader, Propulsion Branch**

A1 **Turbine Research at Purdue from Innovation to Maturity** Prof. Guillermo Paniagua, Purdue Univ., USA

A2 **Development of Cooled Vanes for the High Impact Technologies Research Turbine**  
 Dr. John Clark, Air Force Research Laboratory, USA

11:20 

A3 **Conversion of Jet Engine Combustor from Jet Fuel to Natural Gas** Prof. Emeritus Levy Yeshayahou, Technion


A4 **Development of Ultra-Compact Micro Gas Turbines with 400W Electric Power Output as a Battery Replacement in Drones**  
 Assoc. Prof. Beni Cukurel, Technion

A5 **Small Recuperated Turbo-Fan conceptual design** Dr. David Lior, RJET & TURBOGEN

13:10  AND LABORATORY VISIT

14:40 PARALLEL LECTURES IN ENGLISH & HEBREW

	Second Session Auditorium room 235	Third Session room 240	Forth Session room 241
	<b>ROTOR DYNAMICS AND VIBRATIONS</b> Session Chairman: <b>Dr. Amiram Leitner Rafael</b>	<b>TURBOMACHINERY OPTIMIZATION</b> Session Chairman: <b>Dr. Shaul Eliahu Niv IAI</b>	<b>PRODUCTION TECHNOLOGIES</b> Session Chairman: <b>Ariel Cohen Bet Shemesh Engines</b>
B1	<b>Educational Facilities for Jet Engine Rotordynamics and Balancing</b> Alex Keliman, Technion	C1 <b>Adjoint-Based CFD Optimization Method Demonstrated on a Test Bench Design</b> Shachar Balas, RAFAEL	D1 <b>Blisk Milling - From Component to Machine Design</b> Dr. Bernhard Bringmann, Starrag AG, Switzerland
B2	<b>Estimation of Jet Engine Rotor Bearings Stiffness by Modal Testing</b> Afik Lifshitz, Eyal Setter, Shachar Tresser, RAFAEL	C2 <b>ICE Turbochargers Failures and Some Features of the Study of Their Causes Using the Fault Tree Analysis</b> Dr. Alexander Khrulev and Prof. Sergey Dmitriev, Ukraine	D2 <b>Abradable Coating in Turbomachinery and Plasma Technology, Performance Improvement</b> Yochanan Nachmana, Bet Shemesh Engine Ltd
B3	<b>Spline-Coupling – Effective Stiffness Effect on Rotating System Dynamics</b> Ori Kam, Bet Shemesh Engine Ltd.	C3 <b>Unusual Challenges in Mixed-Flow Pump Design</b> Dvir Mendler, ORMAT	D3 <b>Single Crystal Casting Simulation</b> Shir Avrahami and Ori Kam, Bet Shemesh Engine Ltd

15:40 

	Fifth Session Auditorium room 235	Sixth Session room 240
	<b>CONTROL &amp; DIAGNOSTICS</b> Session Chairman: <b>Dr. Amiram Leitner Rafael</b>	<b>COMBUSTION</b> Session Chairman: <b>Dr. Shaul Eliahu Niv, IAI</b>
E1	<b>Vibro-acoustic Diagnostics of Turbocharger</b> Roman A. Varbanets, Odessa National Maritime University, Ukraine	F1 <b>Combustion Instability in a Swirl Stabilized Combustor</b> Nikhil Balasubramanian and Prof. Danny Michaels, TECHNION
E2	<b>Measurement of Coating Thermal Properties via Induction Phase Radiometry</b> Shani Eitan, IAF	F2 <b>Electric Company Extended Operation Load Range of Gas Turbines as a Tool for Control Electricity Grid Equipped with Renewable Energy Suppliers</b> Dr. Boris Chudnovsky, Alexander Lazenikov and Ilya Chatskiy, Israel
E3	<b>Temperature Measurements innovations in the Aerospace Industry</b> Giora Brandwine, Elcon Mamab Control Instruments Ltd.	F3 <b>Lagrangian Simulation of a Slinger Combustor</b> Ariel Cohen, Bet Shemesh Engine Ltd
E4	<b>Comprehensive AI Powered Health Diagnostics and Prognostics of Turbo-Jet Engines and Gas Turbines through Fusion of Hybrid Methodologies.</b> Dr. Michael Grebstein, RSL Electronic Ltd.	F4 <b>A New Tunnel for Ignition Research</b> Iker Laso, Natali Rozin, Joël van der Lee and Prof. Joseph Lefkowitz, Technion