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Panel lists

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(qjmx@bit.edu.cn)

Programme of Events

<p>Sunday, 30th June</p>	<ul style="list-style-type: none"> • Registration, 10am- 6pm • BIT Turbonachinery lab tour 3-5pm • Reception dinner 5-8pm
<p>Monday, 1st July 8:10 – 11:30 a.m.</p>	<p><u>Session 1: Full Presentation</u></p> <ol style="list-style-type: none"> 1. Opening speech: Prof. Ma (10 mins) 2. Turbo matching and model based control (8:10-9am). Facilitator: Peter Hfbauer, Harold Sun • Two stage boost modeling, Yueyun Wang, GM • Advanced turbo technologies, Tom Grisson, BW 3. Bearing and rotor dynamics (9:9:50am). Facilitator: Harold Sun, Bob Griffith • Ball bearing development, Peter Davis, HW • Oil free turbocharger, Prof. Luis San Andres 4. Aerodynamic development/analysis (9:50-10:40am). Facilitator: Chaochen Ma, Bob McMillen • Mixed flow turbine development, Hua Chen • Advanced turbo to support future engine technologies, Harold Sun 5. Design for durability and low noise radiation (10:40am-11:30am). Facilitator: Peter Davis, Bob Griffith • Turbo durability and reliability, Prof. Luis San Andres • Assessment of turbocharger NH, Xiaozhen Sheng
<p>12:00- 13:00 p.m.</p>	<p><u>Lunch</u></p>
<p>13:00 – 17:30 p.m.</p>	<p><u>Session 2 Panel discussion: system optimization</u></p> <ol style="list-style-type: none"> 1. Advanced aerodynamic performance to support future engines (1:1:50pm) Panelists: Chaochen Ma, Bob Griffith, Bob McMillen, Harold Sun, Hua Chen, Don Stanton, Ce Yang, Hong Zhang, Mingxu Q. • High efficiency and wide operation range aero design for high EGR, power density, • Potential impact of hydraulic, mechanical or electric assisted turbo on aerodynamic design of turbochargers. 2. Trade-off between aero performance and durability (1:50-2:40pm) Panelists: Harold Sun, Bob Griffith, Luis San Andres, Hua Chen, Xin Shi, Steve Arnold, Jizhong Zhang, Hong He, Hang Wang • trade-off between performance and durability with real world applications and future engine combustion, control and

	<p>fuel economy improvement technologies,</p> <ul style="list-style-type: none"> • material for light weight, lowcost and high temperature; mitigation of fatigue failure near resonance frequency speeds; classical assessment of HCF and LCF • Fluid structure interaction/forced response <p>3 Turbo matching correlation with engine performance, control and automated calibration (2:40-3:30pm) Panelists: Yueyun Wang, Bob McMillen, Chaochen Ma, Don Stanton, Ruo Huang, Mingshan Wei, Zhiqiang Zhang, Lifu Guo</p> <ul style="list-style-type: none"> • Characterize turbo performance under high EGR, pulsed environment and operation range that is relevant to auto engine application • Heat transfer impact on turbine flow bench test; • Better turbo flow bench/engine correlation to support Model based control. • Challenges for multi-stage turbocharging: modeling, transition, matching, and fast-warmup <p>(30 min tea break)</p> <p>4 Bearing rotor dynamics and other emerging technologies (4:4-5:0pm) Panelists: Peter Davis, Tom Grissom, Kehrwald, Jaeger, Hadler, Luis San Andres, Peter Hofbauer, Ruo Huang, Lioping Hu, Hong Zhang, Junsheng Zhao, Hong He</p> <ul style="list-style-type: none"> • Issues with Start/stop operation, impact of thrust loading on bearing loss and turbine efficiency measurement • Compressor fouling/erosion, advanced compressor milling technologies; Turbocompound and exhaust heat recovery • Hydraulic, mechanical or electric assisted turbo technologies; • Vibration and noise problem? <p>5 Understand the emerging market (4:50-5:30pm) Panelists: Ruo Huang, Hong Wang, Weijian Han, Luis San Andres, Steve Arnold, Lioping Hu, Jinguang Bi</p> <ul style="list-style-type: none"> • Duty cycles and durability in emerging market for HCF and LCF qualifications • Durability of turbocharger under high sulfur fuel/oil: VGT, sheet metal turbine, etc. Embrittlement of sulfur and H₂ • Lowcost turbo, switching valve, and viable solution for emerging market
18:00 p.m.	Dinner
19:30	Departure for Tianjin, by bus

Attention Panelists are required to prepare 2-4 questions that are appropriate for discussions on respective subjects. The questions need to be submitted to Dr. Mingxu Q., (qimx@bit.edu.cn) before 6/1 and shared among all panelists before the forum

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