Engineering the Future of Combustion Power Systems

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Classroom 13S

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h. 9.00-11.30

Maciej Mikulski is a Full Professor in Combustion Engine Technology and Head of the Department of Energy Technology at the University of Vaasa, Finland. Within the department, he leads the 50-person Efficient Powertrain Solutions (EPS) research group and serves as a Principal Scientist at the University of Vaasa Energy Laboratories.
Prof. Mikulski has worked on several relevant engine/fuel development projects with the world's leading automotive, marine, and off-road OEMs, and co-established the first full-load-capable, ultra-efficient RCCI natural gas engine.
For his research, he was recently honored with the Finnish Ostrobothnia Chamber of Commerce Award and awarded the title of Docent at the University of Oulu.
He is currently, among several other projects, leading Finland's largest industry–academia collaboration ecosystem: the Flexible Clean Propulsion Technology (Flex-CPT).

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Greetings from Vaasa – a small but vibrant community in Finland, beautifully located at the heart of the Kvarken Archipelago UNESCO World Heritage Site. It's quite a unique setting: with just over 70,000 inhabitants, we have the privilege of living close to nature while enjoying thriving professional careers. More than 13,000 people work in one of the 180 energy companies based in the Vaasa region. Together, this ecosystem generates over 6 billion euros in annual business and invests more than 250 million euros in R&D. A significant portion of this is focused on combustion-based energy generation and propulsion systems for marine and off-road applications.
In the seminar, I'd like to give you a glimpse into some of the exciting powertrain projects I've had the privilege to lead. We will explore both past and current developments, and even look ahead to what the future may hold. I'll walk you through different aspects of our work at EPS: from fundamental fuel and combustion research to energy and emissions control, and system-level calibration. The overview will include a mix of methodologies, ranging from modeling and simulation to control development and its embedding in the hardware solutions we design and test in our Energy Laboratories.
My goal is to strike a balance – providing a broad understanding of our powertrain development vision while leaving room to dive deeper into specific technologies.
From my perspective, combustion engine development is far from over – in fact, we're just getting started.
For the in-depth discussion, I'll be counting on your insightful questions!