Future Automotive Technology
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Abstracts
A sustainable reduction of CO₂ emission - respectively a dramatic improvement of fuel consumption at affordable product cost is the key technology driver with passenger cars worldwide. Whereas in the recent years this task has seen very much linked with extensive electrification, the moderate market acceptance of Battery Electric Vehicles and Plug-In Hybrid now shifts more focus on the conventional powertrain again. However, new legislative boundaries (WLTP, RDE) require also further emission refinement in the whole engine map, penalizing especially the most fuel efficient technologies like Diesel and lean burn SI. On the other hand, the high on cost of electrified powertrains results in slow increase of their market share. As a consequence, there will not be a single technology mainstream, but an even increasing diversification of propulsion system.

Thus the key challenge with the development of new powertrains will be to provide specific solutions for different markets and vehicle categories within cost effective modular powertrain systems. For most competitive powertrain solutions, the ICE must not be developed separately, but in close interaction with the other powertrain elements including the control strategies. Both the trend towards downsizing and new transmission concepts enhancing ICE operation in the fuel efficient high load regime will have significant impact on the combustion systems. With best matching of engine, transmission and vehicle characteristics, attractive CO₂ emissions can be achieved within moderate cost.

Biography
Dipl. Ing. Helmut Sikinger, AVL List GmbH (Headquarters)

Education:
1996 – 2000: University Program on Automotive Engineering in Graz, Austria

Professional Experience (at AVL):
2000 – 2006: Gasoline Engine Development
2006 – 2008: Lead Engineer for DI Systems and Calibration of Demo cars
2009 – 2012: Project Management Prototype Engines & Vehicles
Since 2012: Project Management Powertrain Engineering

Symposium:
2004: Stratified Combustion Systems (Aachen - Germany)
2006: Powertrain Trends on Gasoline Engines (Munich - Germany)