VPPC 2020
Connecting Green e-Motion

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Special Session: Innovative Drivetrains for Electrified Vehicles

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Call for Papers

Vehicle manufacturers encounter an ever-growing pressure to reduce fuel consumption and emissions, because of increasingly stringent regulations. As a result, they are forced to innovate to find new solutions which can assist in reaching the climate goals. During the last decades, intermediate solutions to electrify the Internal Combustion Engine (ICE)-based vehicles, such as Hybrid Electric Vehicles (HEV), have been developed, waiting for the total maturity of Battery Electric Vehicles (BEV) and Fuel Cell Electric Vehicles (FCEV). According to EARPA (European Automotive Research Partners Association), the three pillars of the electrified vehicles to tackle are 1) energy storage systems, 2) drivetrain technology and 3) vehicle integration. In this special session, focus is on innovative drivetrains driven for BEV, HEV and FCEV. This special session is open to any contributors to share various experiences.

Topics of interest include, but are not limited to:

- Multiple-speed gearbox;
- Multiple, multiphase and in-wheel electric drives;
- Continuously Variable Transmission (CVT);
- Electric Variable Transmission (EVT);
- electric Continuously Variable Transmission (eCVT) using planetary geartrain;
- High efficiency innovative drivetrains;
- Local control and energy management strategy for innovative powertrains;
- Component design, modelling, simulation of innovative powertrains…

Applications of interest: Applications are both light-duty vehicles and heavy-duty vehicles, such as trucks and buses.

All special session digests must be prepared and submitted in the same way as those for the conference regular tracks, except that the corresponding special session should be identified during submission.

Submission Deadline: **15 April 2020**
Acceptance notification: **30 June 2020**
Final paper submission deadline: 13 July 2020

SS organizers' short bio:

Dr. Walter Lhomme received the M.S. degree in 2004, and the Ph.D. degree in 2007, both in electrical engineering, from the University of Lille (ULille), France, on graphical description tools and methods for modelling and control of electrical systems. He worked as hybrid electric vehicle engineer at AVL UK, in England, for 1 year. Since September 2008 he has been engaged as “Maître de Conférences” at ULille. He is the technical manager of the experimental platform “electricity & Vehicles” of the L2EP. His research activities deal with the graphical descriptions, modelling, control, energy management and hardware-in-the-loop testing applied in electrified vehicles.

Dr. Florian Verbelen was born in Kortrijk, Belgium, in 1990. He received the Master’s degree in electro mechanical engineering from the Technical University College of West Flanders, Kortrijk, Belgium, in 2013. In 2019, he obtained the PhD degree at Ghent University where he worked on the energetic and dynamic impact of variable transmissions on advanced drivetrains. He is currently a Postdoctoral Researcher with Ghent University, FlandersMake-UGent. His current research interests focus on variable transmissions and the impact of low level motor control on torque ripple and efficiency.