

ENERGETICS

ALSTOM - Hydrogen Fuel Cell propulsion trains Traction batteries: new horizons of CBM (Condition Based Maintenance)

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Context of the research activity	Hydrogen technologies Railway applications
Objectives	<p>Validation of the detailed models Reduced models of the technologies of the new traction chain (PEMFC + BoP, H2 storage section, battery + BoP) to be used for diagnostic checks Validation of the models using measured data at lab level, in collaboration with other on-going PhD related to adaptive algorithms for section consumption forecast in Hydrogen trains application Reduced model development (in collaboration with other on-going PhD related to adaptive algorithms for section consumption forecast in Hydrogen trains application): 0D model of PEMFC + BoP, 0D model of H2 storage, 0D model of battery + BoP.</p>
Skills and competencies for the development of the activity	<p>Hydrogen processes and technologies Thermodynamics and heat transfer Modeling of technological components and of complete system</p>