

# Unite! Research Week Programme

	Seminarist	MSc	PhD	Duration	Online preparation
<b>4 Plenary talks</b> <ul style="list-style-type: none"> <li>Advanced decision making for data-driven production and supply chain management</li> <li>Electro-chemical and thermo-chemical pathways for the production of sustainable chemicals</li> <li>Nurturing the future of microelectronics for a sustainable tomorrow (GreenChips-EDU)</li> <li>Towards a Theory for Trustworthy AI</li> </ul>	Pr. Gülgün Alpanl (UGA) Pr. Massimo Santarelli (PoliTo) Pr. Sarah Woywod (TU Graz) Pr. Alexander Jung (Aalto)	X X X X	X X X X	1,5h	
<b>Lectures in 1 scientific specialty</b> (select one): <ul style="list-style-type: none"> <li> <b>Industry 4.0</b> <ul style="list-style-type: none"> <li>Use of flux simulation for decision-aiding in manufacturing context</li> <li>Modern statistical and time series methods for analysis of industrial data with impulsive behavior</li> <li>Mechatronic Machine System Design</li> </ul> </li> <li> <b>Sustainable electronics</b> <ul style="list-style-type: none"> <li>In-person session «discussion / Q&amp;A» on the delivered online content</li> <li>Learn-Repair-Café: several repairs stations for electronic devices with professionals/repair crew</li> </ul> </li> <li> <b>Artificial intelligence</b> <ul style="list-style-type: none"> <li>Robustness and generalization of high-dimensional representations generated by deep models for image recognition</li> <li>Continual learning or how to design smarter classifiers</li> <li>Three Main Components and one Design Principle for Machine Learning</li> </ul> </li> <li> <b>Electrochemical energy conversion and storage</b> <ul style="list-style-type: none"> <li>Durability of electrodes</li> <li>Characterization Techniques</li> <li>Modelling/Simulation</li> </ul> </li> <li> <b>Hydrogen vector</b> <ul style="list-style-type: none"> <li>Synchrotron techniques for the characterization of catalysts</li> <li>Exploring the green supply chain in hydrogen technologies</li> <li>Converter-fed electrolyser systems</li> </ul> </li> <li> <b>Nuclear Engineering</b> <ul style="list-style-type: none"> <li>Fusion: general introduction</li> <li>Fission: Generation IV and Small Modular Reactor</li> <li>Materials</li> </ul> </li> </ul>	Pr. Zakaria YAHOUNI (UGA) Pr. Agnieszka WYŁOMAŃSKA (WUST) Pr. Jari Juhanko (Aalto)  Sarah Woywod (TU Graz) Professional repair crew  Pr. Henryk Maciejewski (WUST) Pr. Michal Wozniak (WUST) Pr. Alexander Jung (Aalto)  Pr. Marian Chatenet and Pr. Antoine Bonnetfont (UGA) Pr. Claire Villevieille (UGA) Pr. Yann Bultel (UGA)  Pr. Jordi Llorca (UPC) Pr. Cesar Valderrama (UPC) Pr. Marko Hinkkanen or Pr. Olli Himanen (Aalto)  Pr. Roberto Zanino (PoliTo) Pr. Sandra Dulla (PoliTo) Pr. Emilie Ferrié (UGA)	X X X  X X  X X X  X X X  X X X	X X X  X X  X X X  X X X  X X X	4,5h	8h

	Seminarist	MSc	PhD	Duration	Online preparation
<b>Transferable skills lectures</b> <ul style="list-style-type: none"> <li>▶ Empowering futuristic minds for responsible innovations</li> <li>▶ Confidence: from body language to scientific communication and grant writing</li> <li>▶ Open science: putting policy into practice</li> </ul>	Pr. Filip Rozborski (TU Graz) Pr. Bartosz Zajackowski (WUST) Pr. Essi Viitanen (Aalto)	X X X	X X X	4,5h	8h
<b>Scientific tools for research lectures</b> (select one): <ul style="list-style-type: none"> <li>▶ Electronic laboratory notebook for collaborative research</li> <li>▶ ChatGPT as support for research</li> </ul>	Pr. Essi Viitanen Pr. Franz Bruckert	X X	X X	1,5h	
<b>Challenges</b> <ul style="list-style-type: none"> <li>▶ Autrans Village (1050-1700): The Alpine connected smart resort - Energy Storage</li> <li>▶ Autrans Village (1050-1700): The Alpine connected smart resort - Mobility</li> <li>▶ Autrans Village (1050-1700): The Alpine connected smart resort - Biomass boiler cogeneration and heat networks</li> <li>▶ Autrans Village (1050-1700): The Alpine connected smart resort - Smart grids</li> <li>▶ Other subjects to be provided by Industrials</li> </ul>		X X X X X	X X X X X	10h	
<b>Compulsory sessions</b> <ul style="list-style-type: none"> <li>▶ Visits of Research Infrastructures around Grenoble</li> <li>▶ Industry forum</li> </ul>		X	X	9h	5h