

3rd Thematic School on Dielectrics 2024

September 15-20, 2024
Porquerolles Island, France

Multifunctional composite insulating materials for electrical applications

Scope Improving the efficiency of Power Engineering systems requires an evolution towards more compact devices as well as an increase in thermal, mechanical and electrical operating stresses, while insulations constitute one of the main reasons for system failure. Progress in these energy conversion and transmission systems therefore goes with better control of materials and stresses to which they are subjected. These evolutions occur in a context where new possibilities for creating, functionalizing and modulating the properties of materials are emerging (nano-composites, functionalization, gradation, etc.) without necessarily being able to derive the best benefit from these advances. In a world where increasing the 'green' share of energy produced and where increased energy efficiency have become essential to meet climate challenges, development activities in advanced multifunctional composite insulating materials and their physical understanding are a response essential for optimal design of new systems for converting and transporting higher voltage (HT) electrical energy.

Topics

- Issues & challenges of multifunctional composites insulators
- Theoretical basics concerning dielectric properties
- Synthesis & processes of (nano)composite materials
- Nanocomposite polymers: structure/properties relationship
- Nanodielectric phenomena
- Composites with gradient properties for field grading
- Composites with improved thermal properties
- Composite dielectric polymers for energy storage
- Aging of (nano)composite insulators: PD resistance and lifespan
- Modeling of dielectric phenomena at composite interfaces
- Nanostructured inorganic thin layers for microelectronics
- Insulation characterization techniques
- Prospects for composite materials and sustainability

Lecturers

- Prof. Nick Quirke, Imperial College London, UK
- Prof. Andrea Cavallini, University of Bologna, Italy
- Prof. Masahiro Kozako, KyuTech, Japan
- Assoc.-Prof. Thomas Andritsch, Univ. Southampton, UK
- Drs. Marie-Paule Besland, CNRS, France
- + Many others to be announced ...

Organisation

Besides the main courses in the mornings, students will be trained, by groups, on simulation desks and various measurement techniques on Lab test benches.



The Thematic School is supported by the French National Centre of Scientific Research (CNRS) and the IEEE Dielectrics and Electrical Insulation Society (DEIS). The organization is by the French dielectrics group of SEEDS-CNRS network <https://seeds.cnrs.fr/gt-materiaux-dielectriques/>

The conference will be held at the Centre IGESA, which belongs to the armed forces of France as a recreation and meeting location.

The site of Porquerolles island, on the French Riviera, is a protected area Classified "heart of National Park" since 2012. Due to accommodation restriction, the island is nearly free from tourists in the evenings making it a quiet place. <https://www.provenceweb.fr/le/var/porquerolles/porquerolles.htm>

Organizers / Contact persons

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Dr. Gilbert TEYSSÉDRE, CNRS, LAPLACE, Toulouse, France
Prof. Petru NOTINGHER, Univ. Montpellier, France

Contact e-mail: seedsschool2024@sciencesconf.org

Registration fees all inclusive*

Students	500 €
Academic staff	900 €
Industrialists	1500 €

*Training + Full accommodation on a double room basis including full catering for 5 days.

Registration is now open. Due to limited accommodation facilities, pre-registration will be validated first by the organizing committee. Please visit our website for instructions: <https://seedsschool2024.sciencesconf.org/>



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