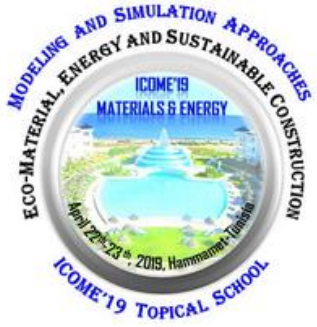
TOPICAL SCHOOL



MODELING AND SIMULATION APPROACHES FOR MATERIALS AND ENERGY, 22-23 APRIL , 2019. 5TH EDITION.

Modeling and Simulation Approaches are vital topics, given current and future challenges of energy transition and sustainable development as well. Subsequently, our fifth Topical School Edition, namely "Modeling and Simulation Approaches for Materials and Energy" will focus on the relationship between energies' optimization and simulation topics. Such a specialized school will take place on April 22th & 23th, 2019, at the Golden Tulip Taj Sultan Resort of Hammamet city, Tunisia, and will present the latest scientific advances into the field.

The Topical School will include various lectures and seminars. These lectures will cover fundamental and applied aspects related to the transfer-phenomena modeling within complex media. Our lecturers are international experts in various areas, such numerical simulation approaches, renewable energy, building energy performance and durability of structures, to name but a few.

Our aim is to be an inter-disciplinary interface into material and energy fields, as well as the environmental one, by putting the emphasis on the renewable resources, materials for renewable energies, energy storage and optimization, bio-sourced materials for building, as well as social issues about energy and environment with contributions of international highlighting experts.

The Topical School is intended in order of priority to PhD students, Masters, Engineers in final year and researchers as well.

OUTLINE PROGRAM

After each presentation by 15-20 minutes discussion/Cooperation

Monday, April 22:

14:30 – 15:00	*OPENING*	*ICOME Chairs-*
15:00 – 17:00	*PHD – University Carrier – Engineering - Energy – Materials – Heat and Mass Transfer.*	*Pr. R. Bennacer* *Pr. M. El-Ganaoui* *Pr. E. Sediki* *Pr. A. Kheiri*

Tuesday, April 23:

09:00 – 12:00	*Sharing experiences:* **About the numerical approach and the industrial applications:* *1-Difference between simulation and modeling.* *2-Predicting only theoretical results ?* *3-Some industrial applications.* **What is Energy?*	*Dr. K. Ragui* *Dr. H. Ben Hamed*
13:00 – 14:30	*LUNCH*	
14:30 – 17:00	*Numerical part:* 1. *Installation of Python (numpy-matplotlib)* 2. *LBM Simulations* 3. *Introduction to schemes BGK et MRT* 4. *D1Q3 scheme for diffusion and acoustics* 5. *D2Q9 scheme for fluid dynamics* 6. *Boundary conditions* 7. *Applications*	*Pr.E. Sediki* *Dr. M. Tekitek* *Dr. A. Msaddek*