REPORT

1st International Conference of Maghreb Interpore Chapter
14–16 April 2025 – Monastir, Tunisia

Foreword

I am very proud to present to you the outcome and results of the 1st International Conference of Maghreb Interpore Chapter ICMIC 01. Good Practices and Learnings: linking business, research and higher education held in Monastir on 14 - 16 April 2025. This event attracted over 100 participants.

The aim of these scientific days is to strengthen scientific ties between the countries of the world as well as to foster meetings between researchers and the business world working on porous media subjects. The event marks the kick off meeting of the Maghreb interpore chapter which regrouping the Tunisian, Moroccan Libyan and Algerian communities.

To that effect, the conference sessions were designed to provide participants with an in-depth understanding and wider discussions on porous media.

The 1st International Conference of Maghreb Interpore Chapter ICMIC 01 wishes to thank wholeheartedly all contributors and participants of this event for making it an informative as well as enjoyable three days.

Professor Nour SGHAIER

Chairman

Opening of the conference

Professor **Kamel Charrada**, president of the University of Monastir.

Inaugural Speech

Professor Kamel Charrada

President of the University of Monastir

Ladies and gentlemen, esteemed colleagues, and distinguished guests,

Good morning, and welcome to the First International Conference of Maghreb Interpore Chapter (ICMIC'01), here in Monastir, Tunisia, from April 14 to 16, 2025.

This conference, hosted by the university of Monastir, the National Engineering School of Monastir (ENIM) and the LESTE Laboratory, brings together researchers from the Maghreb, Mediterranean, and international communities to advance the field of porous media research.

The role of research in porous media has far-reaching implications for sustainable development and the transition to a green economy. Our work in this area is critical not only for advancing scientific understanding, but also for tackling some of the most pressing environmental challenges of our time. Research in porous media plays a pivotal role in areas such as water management, energy storage, and environmental protection. These domains are essential for ensuring a sustainable future for our planet, and the progress we make here at ICMIC01 is part of the collective effort to protect and restore our environment.

As we continue to push the boundaries of knowledge, it is essential that we remain committed to finding innovative solutions that support the transition to clean energy, protect ecosystems, and ensure a more equitable future for all. Our contributions, both in theory and in practice, are vital for building a sustainable world.

At this pivotal moment, let us reflect on the broader role of universities. They are not only centres of knowledge and innovation, but also pillars of peace, justice, equality, and fraternity. In times of conflict and suffering, such as those we witness today in Gaza and other regions, it is our duty to stand against barbarity and genocide. As academics and critical thinkers, we defend human values and advocate for a world where justice and peace prevail.

Finally, I call upon all of us to express our solidarity with the victims of war and armed conflicts, especially those who are trapped, deprived of basic necessities like water and food, threatened by famine. Let us raise our voices against these atrocities and advocate for a world where humanity prevails over violence.

We are deeply grateful to all participants for your valuable contributions, and we look forward to inspiring discussions and collaborative efforts over the next few days.

I would like to express my heartfelt thanks to the local organizing committee, especially Mrs. Nour Sghaier and Mr. Maher Ben Chiekh, key figures from the LESTE Laboratory, and well as all those who have contributed, whether near or far, to the success of this event. Your efforts are sincerely appreciated.

Thank you, and let's make ICMIC01 a resounding success.

1. General Information

The 1st International Conference of the Maghreb Interpore Chapter (ICMIC 01) was held from April 14 to 16, 2025, in Monastir, Tunisia, at the Magic life hotel of Monastir. The event was hosted under:

- The honorary chairmanship of **Professor Kamel CHARRADA,** President of the University of Monastir,
- The scientific patronage of **Professor Maher BEN CHIEKH**, Director of the Laboratory for the Study of Thermal & Energy Systems (LESTE), Tunisia,
- General Chairmanship of **Professor Nour SGHAIER** (LESTE, Tunisia).

2. Scientific committee

To evaluate the scientific presentations, a scientific committee was formed by the following members:

- Abdallah Mhimid (ENIM, Tunisia)
- AbdelMajid Jemni (ENIM, Tunisia)
- Aida Zaabar (U. Bouira, Algeria)
- AmenAllah Guizani (CRTEN, Tunisia)
- Azita Ahmadi (U. Bordeaux, France)
- Brahim Amaziane (UPPA, France)
- Eduardo Abreu (UNICAMP, Brazil)
- Kamal MOHAMMEDI (UMB Boumerdes, Algeria)
- Khalifa Slimi (ENIM, Tunisia)
- Laila Amir (U. Marrackech, Maroc)
- Linda Luquot (U. Montpellier, France)
- Maher Ben Chiekh (ENIM, Tunisia)
- Marc Fleury (IFPEN, France)
- Marc Prat (IMFT, France)
- Majid Hassanizadeh (Utrecht, Netherlands)
- Marco Dentz (CSIC, Spain)
- Mourad Bouteraa (FST, Tunisia)
- Mustapha EL Ossmani (ENSAM-Meknès, Maroc)
- Mustapha Najjari (U. Gabes, Tunisia)
- Najla Tlatli (INAT, Tunisia)
- Nahla Bouaziz (LEE, Tunisia)
- Nasr S. Sanoussi (U.Benghazi, Libya)
- Noureddine Boukadida (ESSTH, Tunisia)
- Rachida Bouhlila (LMHE, Tunisia)
- Salima Ziani (U. Bouira, Algeria)
- Vahid Niasar (Manchester, UK)
- Zoubida Mghazli (U. Kénitra, Maroc)

3. Steering committee (ICIMIC 01)

For the smooth running and preparation of the conference, an organizing team was established by:

- **Amine Belhaj (LESTE, Tunisia)**
- **Hamza Alibi (LESTE, Tunisia)**
- **Hichem Marmouch (LESTE, Tunisia)**
- **Taoufik Brahim (LESTE, Tunisia)**
- **Lamia Guellouz (LMHE, Tunisia)**
- **Leila Ghedira (LESTE,Tunisia)**
- **Lotfi Sellaoui(CRMN,Tunisia)**
- **Med. Amine Ben Amara (LESTE, Tunisia)**
- **Med. Haythem Bahlouli (LMHE, Tunisia)**
- **Nourhene Lasoued (LESTE, Tunisia)**
- **Omayma Fekih (LESTE, Tunisia)**
- **Dhia Chaouch (LESTE, Tunisia)**

4. Participant Statistics

The conference gathered a diverse group of participants from both academia and research institutions. In total, there were approximately 100 participants, including researchers, professors, PhD students, and industry professionals.

Communications are presented in oral form (Only one room). There are 39 communications, 6 plenary conferences and 3 industrial conferences.

Countries represented:

- Tunisia, France, Germany, Canada, Morocco, Algeria, Libya

Types of participants:

- University Professors, PhD and Postdoctoral Researchers, Master's Students, Industry Experts

Major institutions involved:

- LESTE-ENIM (Monastir, Tunisia), ENIT (Tunis, Tunisia), FSM (Monastir, Tunisa), CRTEn-Tunisia, Higher Institute of Water Science and Technology (Gabes, Tunisia)-IFP Energies Nouvelles (France), University of Stuttgart (Germany), CNRS (France),

LMDC (Toulouse-France), ENSAM-Meknès (Morocco), TMU (Canada), Bejaia University (Algeria), Bouira (Algeria) College of Engineering Technology (Libya)

Gendre of participants:

- Communications: 12 men and 27 women
- Industrial communications: 1 man and 2 women
- Keynote Speakears: 4 men and 2 women

5. Research Themes

The conference covered a wide range of research topics related to porous media science and its applications. Key themes included:

a. Porous Media and Modeling

- Multiscale transport
- Coupled hydro-bio-geochemical simulation
- Liquid/gas distribution and evaporation phenomena
- Meshless methods for multiphase flow modelling
- Deep learning

b. Energy and Environment

- Hydrogen and thermal energy storage
- Water desalination
- Phase change materials for buildings
- Drying of agricultural products
- Salt cristallisation

c. Textiles and health

- Cloth masks and baby diapers
- Permeability and breathability characteristics
- Artificial Intelligence AI for textile design

d. Pollution and Water Treatment

- Adsorption of pharmaceutical pollutants
- Depollution using biosourced or composite materials
- Simulation of road traffic emissions

e. Biotechnology

6. Keynote Speakers (Plenary Sessions)

The conference featured six plenary sessions delivered by renowned experts in the field:

- Prof. Michel Quintard – IMF Toulouse, France: Multiscale transport in porous media
- Prof. Rachida Bouhlila – ENIT, Tunisia: Modeling methods for evaporite environments
- Prof. Sylvie Lorthois – IMF Toulouse, France: Blood flow modeling in brain tissues
- Prof. Rainer Helmig – University of Stuttgart, Germany: Applications of porous media in various domains
- Prof. Kamal Mohammedi – UMB Boumerdes, Algeria: Meshless methods for multiphase flow
- Prof. Ziad Saghir – TMU Toronto, Canada: Experimental heat transfer in complex porous structures

Prof. Michel QUINTARD

IMF Toulouse, France.

Prof. Kamal MOHAMMEDI

UMB Boumerdes, Algeria.

Prof. Rachida BOUHLILA

ENIT, Tunisia.

Prof. Rainer HELMIG

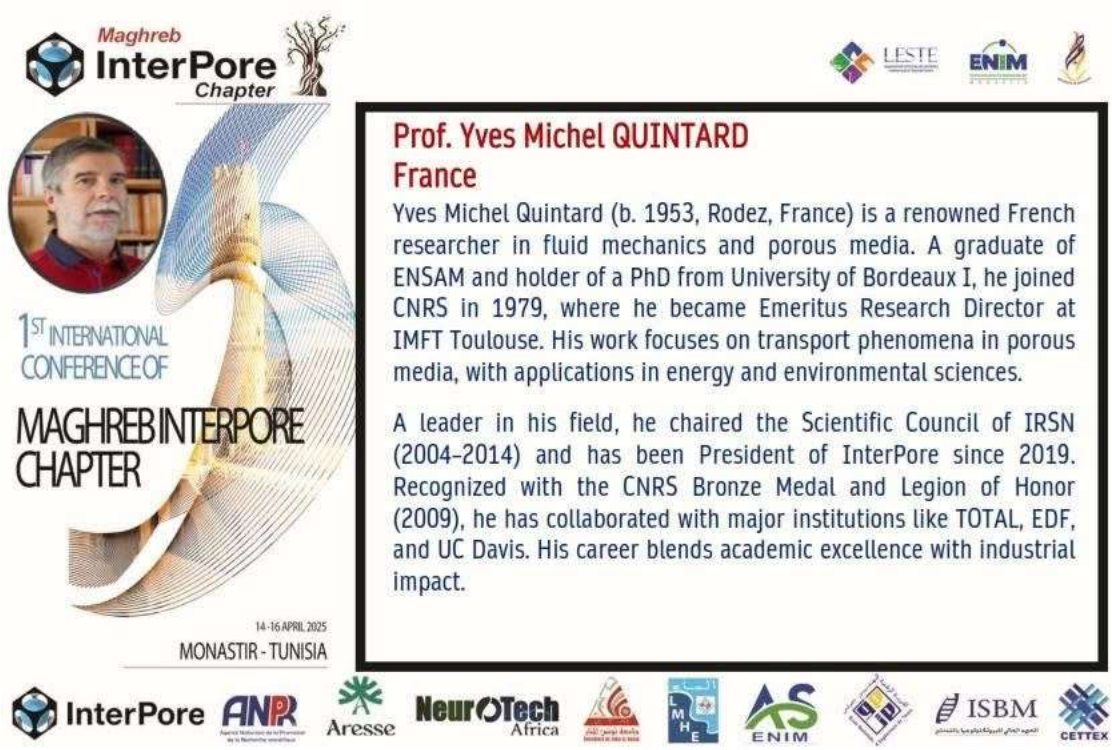
University of Stuttgart, Germany.

Prof. Sylvie LORTHOIS

IMF Toulouse, France.

Prof. Ziad SAGHIR

TMU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Prof. Yves Michel QUINTARD
France
Yves Michel Quintard (b. 1953, Rodez, France) is a renowned French researcher in fluid mechanics and porous media. A graduate of ENSAM and holder of a PhD from University of Bordeaux I, he joined CNRS in 1979, where he became Emeritus Research Director at IMFT Toulouse. His work focuses on transport phenomena in porous media, with applications in energy and environmental sciences.
A leader in his field, he chaired the Scientific Council of IRSN (2004-2014) and has been President of InterPore since 2019. Recognized with the CNRS Bronze Medal and Legion of Honor (2009), he has collaborated with major institutions like TOTAL, EDF, and UC Davis. His career blends academic excellence with industrial impact.
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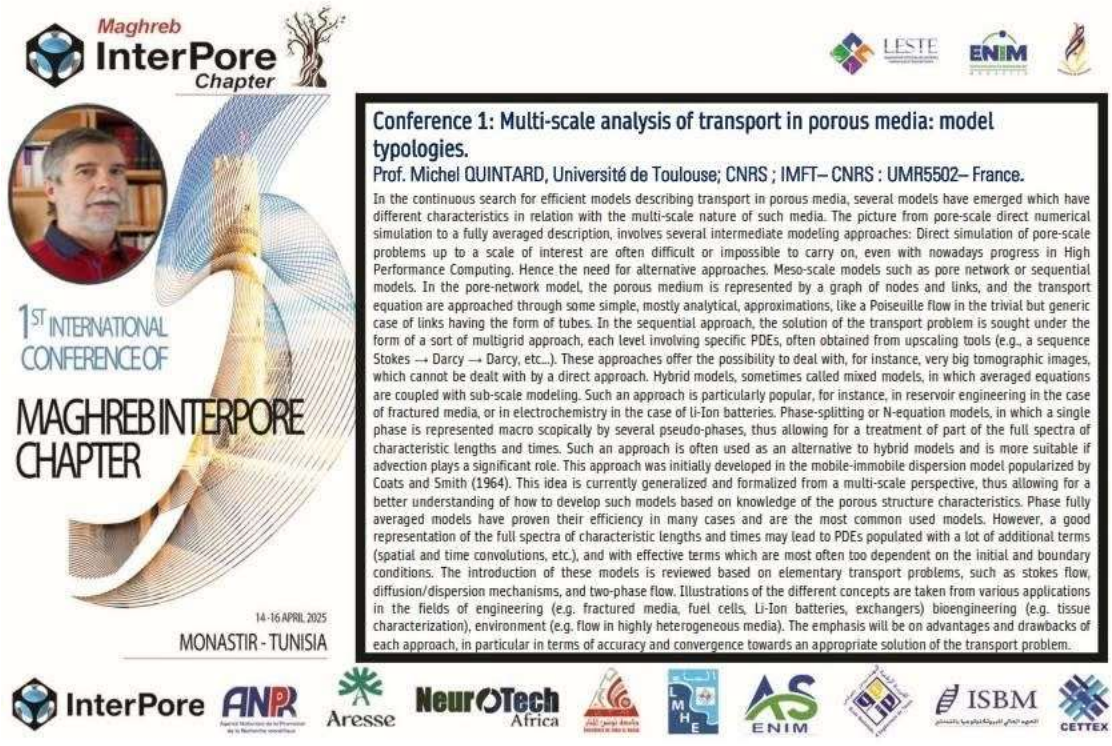
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Conference 1: Multi-scale analysis of transport in porous media: model typologies.
Prof. Michel QUINTARD, Université de Toulouse; CNRS ; IMFT– CNRS : UMR5502– France.
In the continuous search for efficient models describing transport in porous media, several models have emerged which have different characteristics in relation with the multi-scale nature of such media. The picture from pore-scale direct numerical simulation to a fully averaged description, involves several intermediate modeling approaches: Direct simulation of pore-scale problems up to a scale of interest are often difficult or impossible to carry on, even with nowadays progress in High Performance Computing. Hence the need for alternative approaches. Meso-scale models such as pore network or sequential models. In the pore-network model, the porous medium is represented by a graph of nodes and links, and the transport equation are approached through some simple, mostly analytical, approximations, like a Poiseuille flow in the trivial but generic case of links having the form of tubes. In the sequential approach, the solution of the transport problem is sought under the form of a sort of multigrid approach, each level involving specific PDEs, often obtained from upscaling tools (e.g., a sequence Stokes → Darcy → Darcy, etc...). These approaches offer the possibility to deal with, for instance, very big tomographic images, which cannot be dealt with by a direct approach. Hybrid models, sometimes called mixed models, in which averaged equations are coupled with sub-scale modeling. Such an approach is particularly popular, for instance, in reservoir engineering in the case of fractured media, or in electrochemistry in the case of li-Ion batteries. Phase-splitting or N-equation models, in which a single phase is represented macro scopically by several pseudo-phases, thus allowing for a treatment of part of the full spectra of characteristic lengths and times. Such an approach is often used as an alternative to hybrid models and is more suitable if advection plays a significant role. This approach was initially developed in the mobile-immobile dispersion model popularized by Coats and Smith (1964). This idea is currently generalized and formalized from a multi-scale perspective, thus allowing for a better understanding of how to develop such models based on knowledge of the porous structure characteristics. Phase fully averaged models have proven their efficiency in many cases and are the most common used models. However, a good representation of the full spectra of characteristic lengths and times may lead to PDEs populated with a lot of additional terms (spatial and time convolutions, etc.), and with effective terms which are most often too dependent on the initial and boundary conditions. The introduction of these models is reviewed based on elementary transport problems, such as stokes flow, diffusion/dispersion mechanisms, and two-phase flow. Illustrations of the different concepts are taken from various applications in the fields of engineering (e.g. fractured media, fuel cells, Li-Ion batteries, exchangers) bioengineering (e.g. tissue characterization), environment (e.g. flow in highly heterogeneous media). The emphasis will be on advantages and drawbacks of each approach, in particular in terms of accuracy and convergence towards an appropriate solution of the transport problem.
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Prof. Rachida BOUHLILA
Tunisia

Rachida Bouhlila is currently Professor of Hydrogeochemistry, Porous Media and Hydraulic Engineering at the National Engineering School of Tunis (ENIT), Tunisia. After studying Hydraulic Engineering at ENIT, she obtained a Ph.D. in Mechanics (Porous Media) from the National Polytechnic Institute of Toulouse, France. Subsequently, she obtained a Doctorat d'état es-sciences in Hydraulic Engineering from the University of Tunis El Manar. Her research interests include density dependent, saturated-unsaturated flow and reactive transport in porous media, hydrogeology and geochemistry. She is the co-author of many scientific publications. She has supervised numerous Ph.D. and M.S. theses in hydraulics and environmental engineering. She has been teaching courses in hydraulics, hydrogeology, porous transport, geochemistry, and numerical methods and modeling for more than 30 years.

Conference 2: Scientific and economic relevance, assessment and modeling methods for evaporites environment in arid regions.

Prof. Rachida Bouhlila, ENIT, EL Manar University. Tunisia.

Due to the predominance of evapotranspiration in the hydrological balance and the relatively small amount of runoff that rarely reaches the sea, many arid areas of the world, including Tunisia, have saline depressions of varying sizes. These are known as Sebkhas. These saline environments are still of great scientific interest, particularly for reconstructing past climates, as palaeohydrological indicators and as current geological analogues, for example for oil formations or potential nuclear waste storage sites in deep salt formations. They also pose a risk of salinisation to surrounding groundwater resources. Most importantly, they have significant economic potential due to the abundant or rare mineral resources they contain and their potential for agriculture and aquaculture in hypersaline environments. Hydrological studies of the sebkhas have been carried out since the 1950s to assess their potential. The physico-chemical processes in these environments are complex and interdependent, and understanding and quantifying them is important for the various scientific and economic interests mentioned above.

From the early 1960s, the accumulation of data on specific Sebkhas enabled progress to be made in the conceptual and physical modelling of these systems and processes. Harbaugh and Bonham-Carter (1969) presented an attempt in this direction, proposing a model of horizontal flow in a lagoon partially isolated from the sea, where salt precipitation by evaporation occurs whenever the concentration of halite exceeds a maximum value. In Tunisia, Floridia (1971) and Perthuisot (1975) began a comprehensive study of Sebkhat Elmelah in 1967. This led to the development of a conceptual model for the genesis of this evaporitic basin following the deposition of salts by evaporation of seawater.

GEODENS is a FORTRAN code for modelling partially or fully saturated density dependent flow and multispecies reactive solute transport in porous media under both local chemical equilibrium and kinetic conditions. It can handle geochemical reactions such as mineral dissolution-precipitation processes. The code takes into account flow, transport and geochemical reactions in porous media. GEODENS consists of two modules, (i) the density-dependent flow and multispecies transport module and (ii) the geochemical module. The mathematical formulation of the first module leads to a non-linear and strongly coupled system of equations. To solve such equations, a finite element method has been developed with a consistent numerical scheme of gravity terms to calculate Darcy velocities (Voss, 1984). The second module focuses on salt and brine geochemistry using the Pitzer model (Pitzer et al., 1984). This geochemical module allows the calculation of ionic and solvent activities as well as the density of the solution. Reactions of salts, including dissolution-precipitation processes, are controlled by diffusion and represented by a first-order kinetic law or by successive equilibrium states.

The complete hydrogeochemical model integrates the two modules described above. The code iteratively calculates the amounts of different salts that can precipitate or dissolve in a solution when the system is disturbed from its equilibrium. This can be due to evaporation or mixing with another solution. The hydrodynamic parameters of the system may also change due to mineral dissolution-precipitation reactions. Cases of study presented here are related to seawater intrusion into coastal carbonate soluble aquifers and to Sebkha genesis with various salts deposited after seawater evaporation over geological time. We use the hydrogeochemical model to reproduce and quantify the hydrogeochemical processes during the genesis and evaporates filling of sebkhas of marine and continental origin. The cases of two South Tunisian sebkhas, coastal and continental, is used as a basis for the geometric configuration as well as for the space and time scales.


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Conference 3: Modeling blood flow and mass transfers within the brain
Prof. Sylvie LORTHOIS, IMFT, CNRS, UMR5502, Univ. Toulouse III- Paul Sabatier, INPT, France
Because the brain lacks any substantial energy reserves, the cerebral microvascular system is essential to a large variety of physiological processes in the brain, such as blood delivery and local blood flow regulation as a function of neuronal activity (neuro-vascular coupling). It provides a unique window to observe the functioning brain using hemodynamically-based functional imaging techniques. It also plays a major role in disease (stroke, neurodegenerative diseases, ...). However, the functional consequences of vascular damage (including acute occlusions or long-term remodeling in ageing or diseases) are poorly understood. In the last decade, cutting edge experimental techniques, including two-photon scanning laser microscopy (TPSLM) and optical manipulation of blood flow, have produced huge amounts of anatomic and functional experimental data in normal and Alzheimer Disease (AD) mice. Unfortunately, no equivalent experimental tool is available to study the structure/function relationships of brain microcirculation in humans. In this context, modeling approaches are playing an increasing role. In this talk, I will present some of the approaches we develop for studying blood flow and mass transfer at various scales within the brain, most of which are based on methodologies developed for the study of multiphase or reactive flows in porous media and taking into account the specific architecture of the microvascular cerebral network. This network can indeed be viewed as the superposition of two types of structures: a slow mesh-like porous network and fast fractal arborescent structures, composed of arteries and veins, which gives rise to unexpected flow patterns. Finally, I will present some perspectives related to the role of cerebral microcirculation in neurodegenerative diseases.
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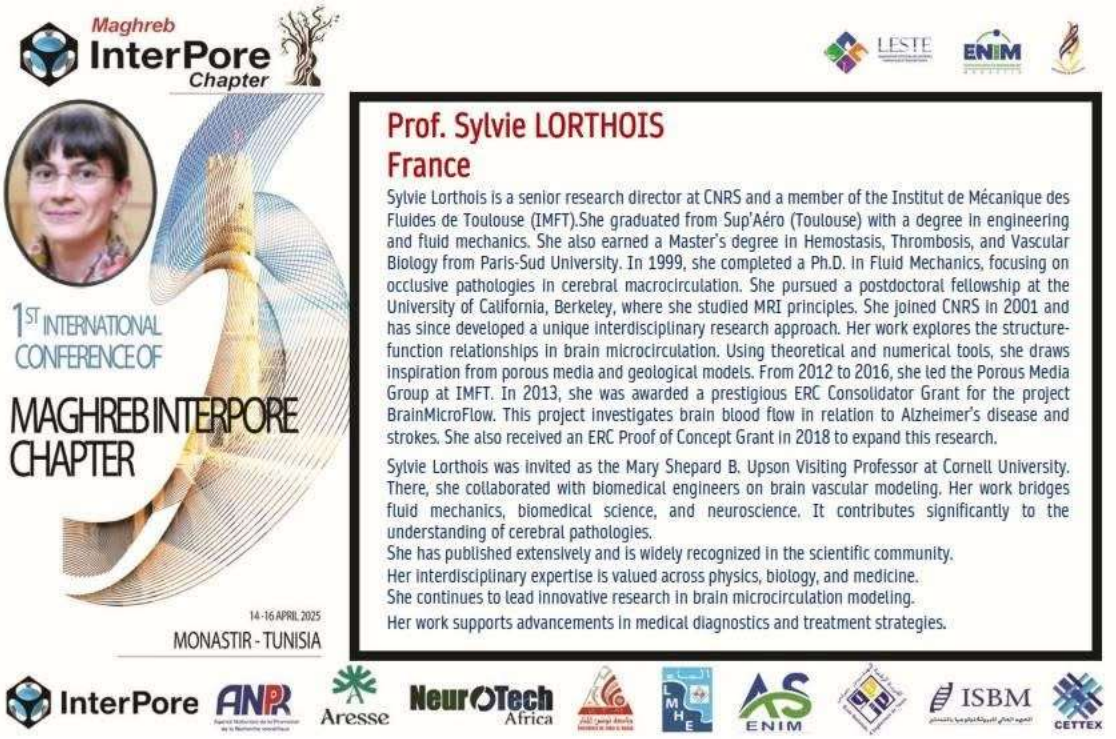
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Prof. Sylvie LORTHOIS
France
Sylvie Lorthois is a senior research director at CNRS and a member of the Institut de Mécanique des Fluides de Toulouse (IMFT).She graduated from Sup'Aéro (Toulouse) with a degree in engineering and fluid mechanics. She also earned a Master's degree in Hemostasis, Thrombosis, and Vascular Biology from Paris-Sud University. In 1999, she completed a Ph.D. in Fluid Mechanics, focusing on occlusive pathologies in cerebral macrocirculation. She pursued a postdoctoral fellowship at the University of California, Berkeley, where she studied MRI principles. She joined CNRS in 2001 and has since developed a unique interdisciplinary research approach. Her work explores the structure-function relationships in brain microcirculation. Using theoretical and numerical tools, she draws inspiration from porous media and geological models. From 2012 to 2016, she led the Porous Media Group at IMFT. In 2013, she was awarded a prestigious ERC Consolidator Grant for the project BrainMicroFlow. This project investigates brain blood flow in relation to Alzheimer's disease and strokes. She also received an ERC Proof of Concept Grant in 2018 to expand this research.
Sylvie Lorthois was invited as the Mary Shepard B. Upson Visiting Professor at Cornell University. There, she collaborated with biomedical engineers on brain vascular modeling. Her work bridges fluid mechanics, biomedical science, and neuroscience. It contributes significantly to the understanding of cerebral pathologies.
She has published extensively and is widely recognized in the scientific community.
Her interdisciplinary expertise is valued across physics, biology, and medicine.
She continues to lead innovative research in brain microcirculation modeling.
Her work supports advancements in medical diagnostics and treatment strategies.
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Prof. Rainer HELMIG
Germany

Rainer Helmig is Professor Emeritus of the Department of Hydromechanics and Modelling of Hydrosystems at the University of Stuttgart, Germany. He gained his doctoral degree from the University of Hannover in 1993 and a the Habilitation degree from the University of Stuttgart in 1997. In 1995, he was awarded the renowned "Dresdner Grundwasserforschungspreis" for his doctoral thesis. From 1997 to 2000, he held a professorship at the Technical University of Braunschweig. He was cofounder and, from 2009 to 2011, President of "InterPore"; from 2007 to 2015, he was spokesman of the International Research Training Group "NUPUS - Nonlinearities and upscaling in porous media", and from 2018 to 2023 he was spokesman of the Collaborative Research Centre 1313 "Interface-Driven Multi-Field Processes in Porous Media: Flow, Transport and Deformation". From 2007 to 2018, he was a member of the Executive Board of Directors of the Cluster of Excellence Simulation Technology at the University of Stuttgart. He is member of Academy of Sciences, Academia Europaea, Heidelberg and acatech. In 2020, he was granted the AGU Fellowship of the American Geophysical Union. In 2022 he got the Honorary Degree of Doctor of Engineering at the Heriot-Watt University. He was awarded the Kimberly-Clark Distinguished Lectureship 2025.

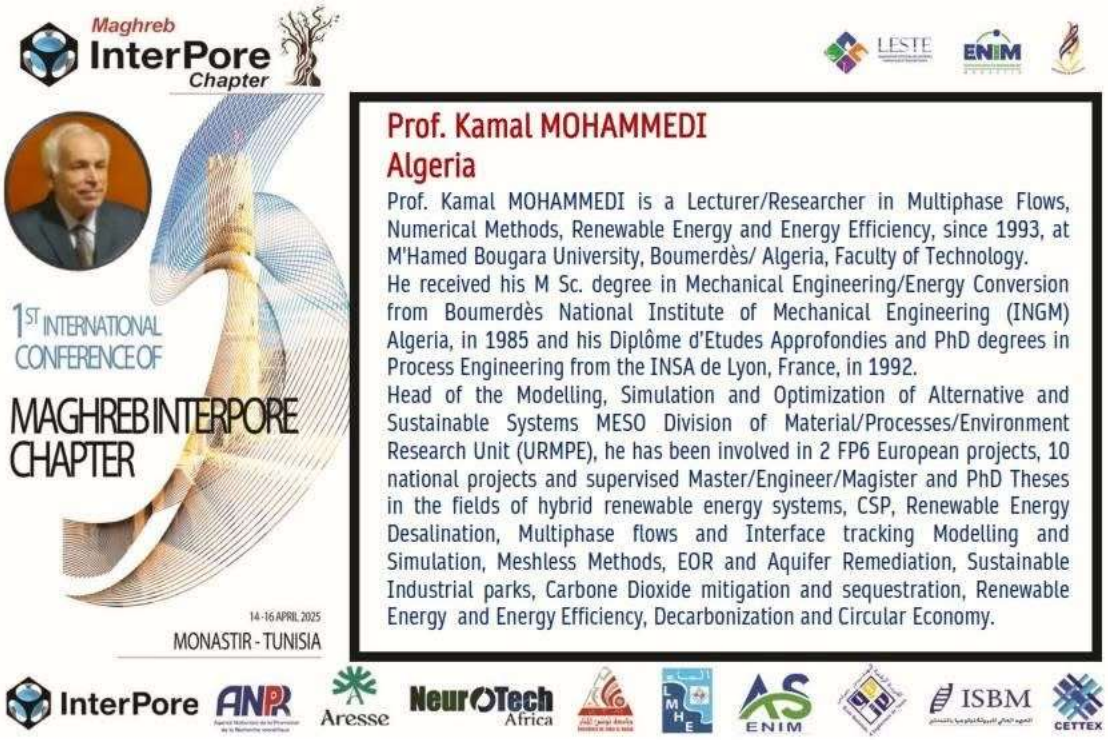
Conference 4: From the Brain to Water Uptake of Roots to Fuel Cells: Porous Media are "Almost" Everywhere

Prof. Rainer Helmig, University of Stuttgart, Germany.

Porous media are almost everywhere. The understanding of flow, transport and deformation processes in porous media is important for the optimization of fuel cells, energy storage, the prediction of landslides due to heavy rainfall or the spread of tumors in human tissue.
In this lecture, we will first give a brief overview of the importance of porous media. Using selected examples, we will cover the range from environmental to technical and relevant bio-issues.
Then we would like to present selected modelling approaches and analyses using two concrete application examples:

- First, we can use the knowledge of porous media to make better predictions when multiple sclerosis flares. What happens in the porous medium "brain" when the blood-brain barrier no longer functions properly? How can research in the field of porous media positively influence the treatment of multiple sclerosis?
- Secondly, we would like to discuss whether it is possible to improve water management in fuel cells as a drive technology with our knowledge of porous media. What role does the understanding of porous media play in the context of alternative forms of mobility such as fuel cells? Are our "classical models" for water transportation helpful?

Regarding both of the above-mentioned topics, the use of simulations helps because they make the invisible processes in the brain and in the fuel cell visible (I hope).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Prof. Kamal MOHAMMEDI
Algeria
Prof. Kamal MOHAMMEDI is a Lecturer/Researcher in Multiphase Flows, Numerical Methods, Renewable Energy and Energy Efficiency, since 1993, at M'Hamed Bougara University, Boumerdès/ Algeria, Faculty of Technology.
He received his M Sc. degree in Mechanical Engineering/Energy Conversion from Boumerdès National Institute of Mechanical Engineering (INGM) Algeria, in 1985 and his Diplôme d'Etudes Approfondies and PhD degrees in Process Engineering from the INSA de Lyon, France, in 1992.
Head of the Modelling, Simulation and Optimization of Alternative and Sustainable Systems MESO Division of Material/Processes/Environment Research Unit (URMPE), he has been involved in 2 FP6 European projects, 10 national projects and supervised Master/Engineer/Magister and PhD Theses in the fields of hybrid renewable energy systems, CSP, Renewable Energy Desalination, Multiphase flows and Interface tracking Modelling and Simulation, Meshless Methods, EOR and Aquifer Remediation, Sustainable Industrial parks, Carbone Dioxide mitigation and sequestration, Renewable Energy and Energy Efficiency, Decarbonization and Circular Economy.
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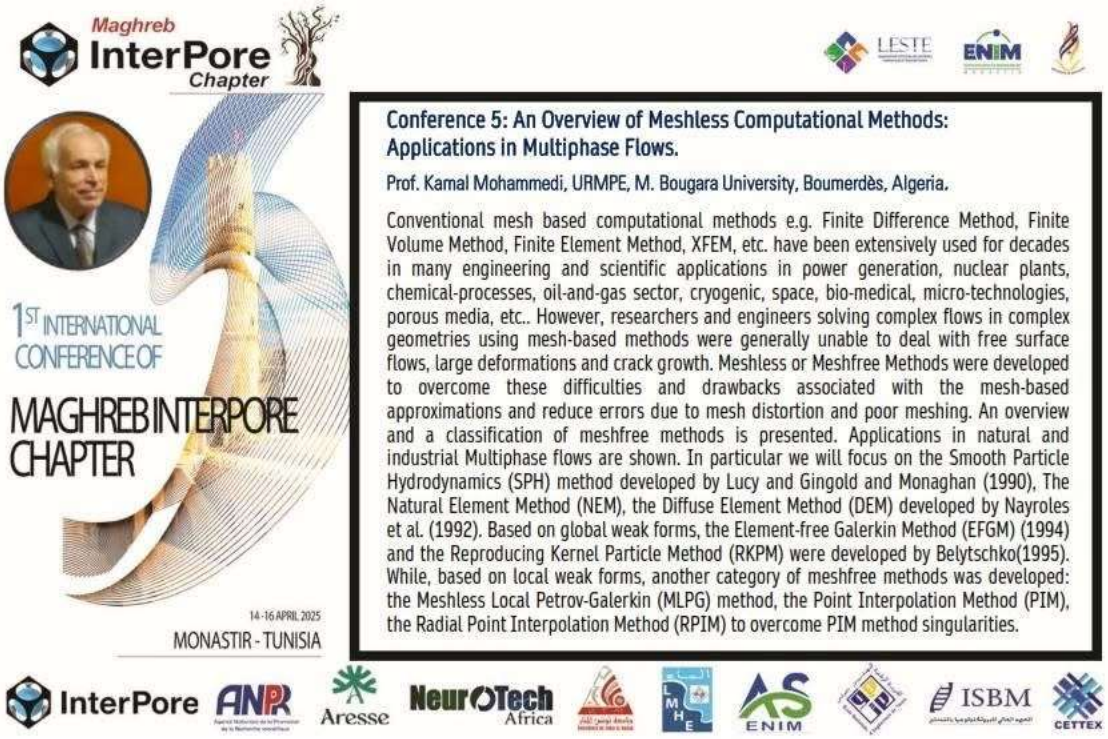
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Conference 5: An Overview of Meshless Computational Methods: Applications in Multiphase Flows.
Prof. Kamal Mohammedi, URMPE, M. Bougara University, Boumerdès, Algeria.
Conventional mesh based computational methods e.g. Finite Difference Method, Finite Volume Method, Finite Element Method, XFEM, etc. have been extensively used for decades in many engineering and scientific applications in power generation, nuclear plants, chemical-processes, oil-and-gas sector, cryogenic, space, bio-medical, micro-technologies, porous media, etc.. However, researchers and engineers solving complex flows in complex geometries using mesh-based methods were generally unable to deal with free surface flows, large deformations and crack growth. Meshless or Meshfree Methods were developed to overcome these difficulties and drawbacks associated with the mesh-based approximations and reduce errors due to mesh distortion and poor meshing. An overview and a classification of meshfree methods is presented. Applications in natural and industrial Multiphase flows are shown. In particular we will focus on the Smooth Particle Hydrodynamics (SPH) method developed by Lucy and Gingold and Monaghan (1990), The Natural Element Method (NEM), the Diffuse Element Method (DEM) developed by Nayroles et al. (1992). Based on global weak forms, the Element-free Galerkin Method (EFGM) (1994) and the Reproducing Kernel Particle Method (RKPM) were developed by Belytschko(1995). While, based on local weak forms, another category of meshfree methods was developed: the Meshless Local Petrov-Galerkin (MLPG) method, the Point Interpolation Method (PIM), the Radial Point Interpolation Method (RPIM) to overcome PIM method singularities.
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7. Session moderator

The sessions are moderated by the following Professors:

- Noureddine Boukadida (ESSTH, Tunisia)
- Faten Fayla (ENIM, Tunisia)
- Maher Ben Chiekh (ENIM, Tunisia)
- Khalifa Slimi (ENIM, Tunisia)
- Azita Ahmadi Senichault(Bordeau, France)
- AbdelMajid Jemni (ENIM, Tunisia)
- Abdallah Mhimid (ENIM, Tunisia)
- Fouad Mzali (ENIM, Tunisia)

8. Program Summary by Day

Monday, April 14, 2025

- Opening and Welcome by the president of Monastir University and the organizing committee
- Three plenary sessions and twelve oral presentations
- Topics included porous media modeling, AI in textile design, and underground hydrogen storage
- Steering Committee Elections
- Conference Dinner

Tuesday, April 15, 2025

- One plenary session and fourteen oral presentations
- Themes included salt crystallization, X-ray imaging, phase change materials, and adsorption technologies
- Afternoon excursion to **El Djem** in the context of scientific tourism and a Gala Dinner

Wednesday, April 16, 2025

- Two plenary sessions and fifteen oral presentations
- Topics included pharmaceutical pollutant removal, road traffic emissions, biomass pyrolysis, and water desalination
- Closing Ceremony and visit to ENIM