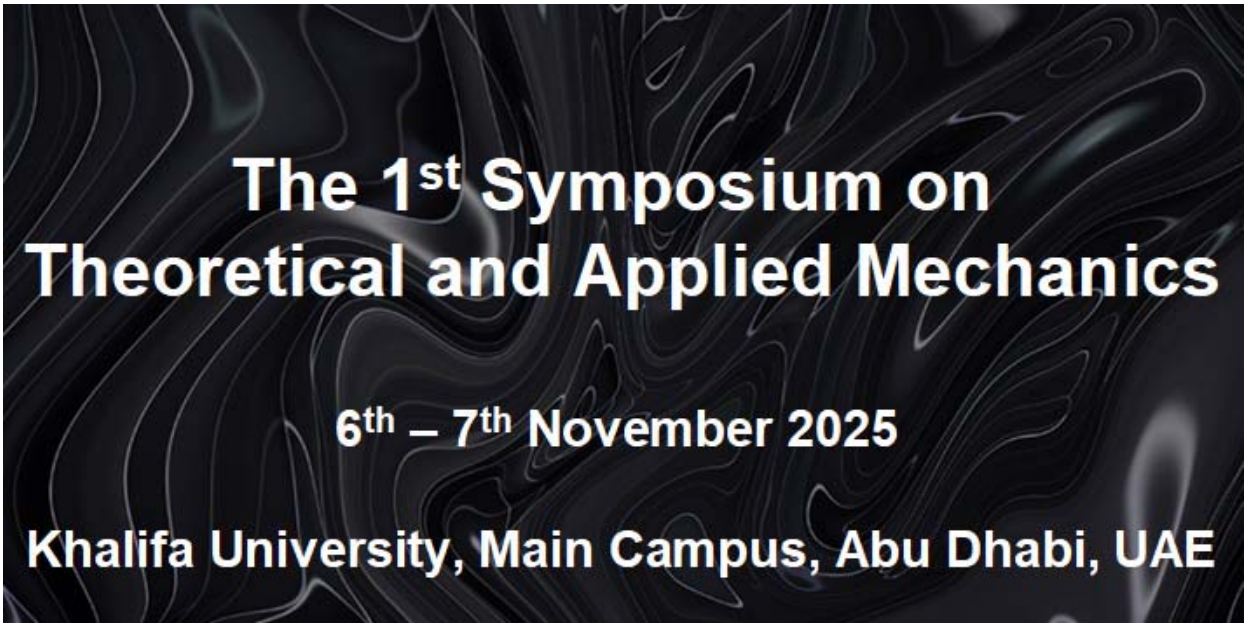

The sponsors of the
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1 About Symposium on Theoretical and Applied Mechanics

The 1st Symposium on Theoretical and Applied Mechanics (STAM1) evolved from the successful 1st (2023) and 2nd (2024) UAE Thermo-Fluids Days. This symposium broadens its focus to encompass both foundational and emerging topics in general mechanics, solid mechanics, fluid mechanics, biomechanics, and other related fields, such as data-driven and machine learning modeling applied in mechanics. STAM1 is a forum designed to bring together researchers, scholars, engineers, and practitioners working across all areas of mechanics to discuss the latest research advances in the broad areas of theoretical and applied mechanics. In addition, STAM1 allows researchers from institutions in UAE and beyond to meet, share ideas, and establish collaborative research to advance academic institutions. STAM1 will encompass the five following intersecting fields:

- Fluid Mechanics & Thermo-sciences
- Solid Mechanics & Materials
- Biomechanics & Bioengineering
- Computational & Data-Driven Mechanics
- Dynamics, Control & Extreme Environments

2 Local and National Organizing Committees

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3 Venue Maps


جامعة خليفة
Khalifa University
Location map
1st Symposium on Theoretical and Applied Mechanics
Abu Dhabi Police HQ
Multi story car parking
Abu Dhabi Corniche
A
B
C
D
E
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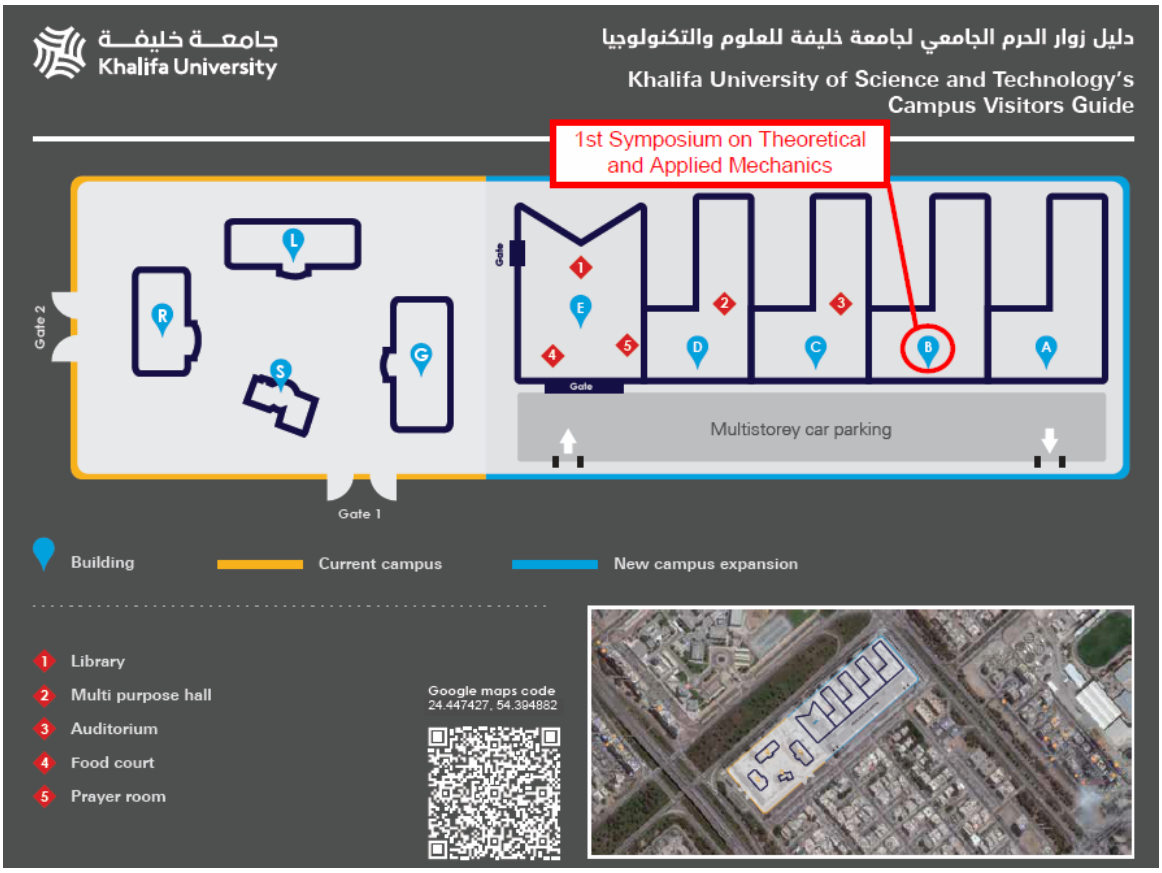
R
S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دليل زوار الحرم الجامعي لجامعة خليفة للعلوم والتكنولوجيا
Khalifa University of Science and Technology's Campus Visitors Guide
1st Symposium on Theoretical and Applied Mechanics
Gate 2
Gate 1
Gate
Multistorey car parking
Building
Current campus
New campus expansion
1 Library
2 Multi purpose hall
3 Auditorium
4 Food court
5 Prayer room
Google maps code
24.447427, 54.394882

4 Program Schedule

Time	Thursday 6th November 2025
7:30 - 8:15	Registration
8:15 - 8:30	Opening Ceremony (B00055)
8:30 - 9:00	**Invited Lecture 1**: Microfluidic Paper Based Analytical Devices (Prof Sunil Kumar, NYU Abu Dhabi) (B00055)
9:00 - 9:30	**Invited Lecture 2**: Bridging The Gap: From Research to Value Realization and Real-World Impact (Dr Ahmad Mourad, Transmed) (B00055)
9:30 - 10:00	Coffee Break & **Poster Session** (Spin Area)
10:00 - 12:00	**Parallel Sessions**: 1A (B00055) and 1B (B00107)
12:00 - 14:00	Photo Session & Lunch (KU Food Court, ground floor Building E, Market Place)
14:00 - 14:30	**Invited Lecture 3**: Oxygen Deficiency Drives Drastic Pattern Transition in Algal Bioconvection (Dr Azam Gholami, NYU Abu Dhabi) (B00055)
14:30 - 15:00	**Invited Lecture 4**: Invariant Manifold Dynamics and Spacecraft Trajectory Design (Dr Elena Fantino, KU) (B00055)
15:00 - 15:30	Coffee Break & **Poster Session** (Spin Area)
15:30 - 17:10	**Parallel Sessions**: 2A (B00055) and 2B (B00107)

Time	Friday 7th November 2025
8:30 - 9:00	**Invited Lecture 5**: Exploiting Multi-Scale Dynamics in Reacting Flows (Prof Dimitris Goussis, KU) (B00055)
9:00 - 9:30	**Invited Lecture 6**: Fluid and Solid Mechanics in Food Technology: Where Science Meets Art (Dr Sergey Melnikov, IFFCO Group) (B00055)
9:30 - 9:45	Coffee Break (Spin Area)
9:45 - 11:45	**Parallel Sessions**: 3A (B00055) and 3B (B00107)
11:45 - 12:00	Closing Ceremony (B00055)

Thursday 6th November 2025, Parallel Session 1A (Fluid Mechanics) (B00055) Chair: Dr Hassan Ali	
10:00-10:20	STAM 2025-02-O: Shock–Vortex Dynamics and Mixing in Fin Assisted Elliptical Jet in Crossflow at Mach 2. *by Alhanouf Eshtairy**
10:20-10:40	STAM 2025-03-O: Passive Ventilation via Origami-Driven Stack Effect *by Zueter A.F. *, Dalaq A.S. & Daqaq M.F.*
10:40-11:00	STAM 2025-36-O: Multi-resolution DMD Analysis of Swirling Spray Dynamics under Flowrate and Ethanol Blending Effects *by Ibrahim Alsafadi*, Afshin Goharzadeh & Hamid Ait Abderrahmane*
11:00-11:20	STAM 2025-21-O: Two- and Three-dimensional Simulations on the Improved Aerodynamic Efficiency due to Partial Heating of Airfoils *by Eman Saddoun*, Bashayer Alhammadi, Hamad Almaeeni, Sultan Alhammadi, Immanuvel Paul & Simon Chingman Yu*
11:20-11:40	STAM 2025-25-O: Aerodynamics and Collection Efficiency of 3D Fog Harvesters *by Ahmed Hisham Shaaban, Md Zishan Akhter, Kamil Jaworczak, Badr Mohamed, Chakravarthy Gudipati & Philip Richard Hart*
11:40-12:00	STAM 2025-26-O: Global Well-Posedness of Three-Dimensional Navier-Stokes Equations with Conservative Forces *by Lo, Assane*, Mama Chacha & Mouhamed M. Fall*

Thursday 6th November 2025, Parallel Session 1B (Bio Mechanics) (B00107) Chair: Dr Marwan El Rich	
10:00-10:20	STAM 2025-07-O: Biomechanical Evaluation of Surrogate Headforms with Ballistic Helmets under High-Velocity Impact *by Atul Harmukh* & Shailesh Ganpule*
10:20-10:40	STAM 2025-13-O: Pressure-Flow Relationships in Micropipettes for High-Precision Single-Cell Studies *by Abolfazl Noh Rouzian & Majid Malboubi**
10:40-11:00	STAM 2025-24-O: Anthropometry and Plantar Pressure Distribution during Gait in Male Subjects: A Novel Approach *by Abdelsalam Tareq Alkhalaileh, Kinda Khalaf, Herbert F. Jelinek & Marwan El Rich**
11:00-11:20	STAM 2025-35-O: Validation of Imbert-Fick Law using Finite Element Analysis and Experimental Testing of Artificial Cornea *by Leo Puthussery Jose*, Nader Vahdati, Marwan El-Rich & Mohamed L Seghier*
11:20-11:40	STAM 2025-38-O: Enhancing Lightweight Universal Talus Implants: The Role of a Compliant Polycarbonate-Urethane Coating in Reducing Contact Pressures *by Ahmed H. Hafez*, Mubinul Islam, Muhammad Mujtaba Syed, Tao Liu & Marwan El-Rich*
11:40-12:00	

Thursday 6th November 2025, Parallel Session 2A (Solid Mechanics) (B00055) Chair: Dr Andreas Schiffer	
15:30-15:50	STAM 2025-05-O: Numerical Investigation of Static and Dynamic Response of Strut-Based Interpenetrating Phase Composites *by Kishor B. Shingare* & Kin Liao*
15:50-16:10	STAM 2025-16-O: Phase Field Modeling of Fracture in Fiber Reinforced Composite Plates *by Shubham Rai* & Badri Prasad Patel*
16:10-16:30	STAM 2025-40-O: Sustainable and Portable Kapok-Based Hydroelectric Generators with High Power Density for Wearable Applications *by Dawei Zhang, Dezhuang Ji, Baosong Li, Xinyu Wang, Abdallah Kamal, Hongtao Zhang, Kin Liao & Lianxi Zheng**
16:30-16:50	STAM 2025-41-O: Low-Speed Impact Response and Shape Memory Effect of Surface-Based Nitinol Lattices *by Mohamad Yassine*, Marwan El Rich & Wael Zaki*

Thursday 6th November 2025, Parallel Session 2B (Fluid/Solid Mechanics) (B00107) Chair: Dr Immanuvel Paul	
15:30-15:50	STAM 2025-44-O: Reliable Production of Small-Scale Microfluidic Features with SLA: Dimensional and Mechanical Insights *by Ayah Al Babouli & Majid Malboubi**
15:50-16:10	STAM 2025-47-O: Structural and Surface Modifications of Cesium Implanted SiC During Annealing in Vacuum and Helium Environments *by H.A.A. Abdelbagi, J.B. Malherbe, A.S. El-Said, T.T. Hlatshwayo & S.S Ntshangase*
16:10-16:30	STAM 2025-48-O: Deformation Analysis of a Coated Aircraft Wing using Fluid-Structure Interface *by Husnain Raza Qasim* & Walid Abou-Hweij*
16:30-16:50	STAM 2025-39-O: TPMS Heat Exchangers for Enhanced Freshwater Production in Humid Environments *by Omar Abdelqader*, Rashid K. Abu Al Rub & Mohamed I. Hassan Ali*
16:50-17:10	STAM 2025-49-O: Numerical Investigation of Flow Dynamics Around a Heated Square Cylinder in Mixed Convection *by Mohd Perwez Ali, Nadeem Hasan & Sanjeev Sanghi*

Friday 7th November 2025, Parallel Session 3A (Fluid Mechanics) (B00055) Chair: Dr Youssef Belhamadia	
9:45-10:05	STAM 2025-30-O: Novel Hierarchical Fractal Geometries for Gypsum Scaling Control in Membrane Distillation: Computational Fluid Dynamics Approach *by Balsam Swaidan*, Immanuvel Paul & Simon Ching Man Yu*
10:05-10:25	STAM 2025-31-O: Spectral Signatures and Inter-Scale Dynamics of Non-Kolmogorov Single-Bubble Turbulence *by Majeed N.J.*, Paul I. & Yu S.C.M.*
10:25-10:45	STAM 2025-34-O: Inherent Thermodynamic Performance Assessment of a Variable Refrigerant Flow System under Transient Cooling Load: A Case Study of an Eco-Villa *by Muhammad Reshaeel & Mohamed I. Hassan Ali**
10:45-11:05	STAM 2025-15-O: Large-Eddy Simulation of a Mach 6 Hypersonic Intake Mode: Toward Predictive Modeling of Unstart *by Kan Wang, Vinayak Rajan, Karthik Subramani & Brett Bornhoft*
11:05-11:25	STAM 2025-37-O: Bio-Inspired V-Formations for Low-Speed Micro Aerial Vehicles *by Abikrishnaa Parimelalagan* & Majid Hassan Khan*
11:25-11:45	STAM 2025-43-O: Droplet Deposition into a Circular Hole with Sharp/Rounded Edge *by Zhang Haokun*, Guan Qiangshun, MD Didarul Islam, Nader Vahdati, Firas Jarrar & Yap Yit Fatt*

Friday 7th November 2025, Parallel Session 3B (Fluid Mechanics) (B00107) Chair: Dr MD Didarul Islam	
9:45-10:05	STAM 2025-09-O: Nanoscale Taylor-Aris Dispersion and Slip Effects in Hybrid Nanochannels *by Mehdi Neek-Amal*
10:05-10:25	STAM 2025-11-O: Numerical Investigation of Optimum Parameters for Two Different TPMS Inserts in Heat Transfer Applications *by Ranjit J. Singh*, Sanjairaj Vijayavenkataraman & Sunil Kumar*
10:25-10:45	STAM 2025-19-O: Computational Study of Heat Transfer Augmentation in Rectangular Channel with Upper Wall Exposed to Constant Heat Flux *by Abed Mennad**
10:45-11:05	STAM 2025-20-O: Nano-Enhanced Thermal Storage Panels for Cubesats using Phase Change Materials: Computational Design, Physics, and Reduced-Order Modeling *by Reema Razak*, Immanuvel Paul & Simon Ching Man Yu*
11:05-11:25	STAM 2025-22-O: Study Heat Transfer through Fins for Heat Pipe in CubeSat Application *by Yousuf El Chihabi, Md. Islam*, Yap Fatt & Firas Jarrar*
11:25-11:45	STAM 2025-28-O: Spectral Management in Hybrid Photovoltaic Thermal Systems: A Thermofluid Dynamics Approach *by Mohit Barthwal & Dibakar Rakshit**

Thursday 6th November 2025, Poster Session (Spin Area)	
9:30 - 10:00 & 15:00 - 15:30	STAM 2025-06-P: Numerical Simulation of a Micromixer with Semi-Circular Obstructions to Mix Blood Plasma and DI Water *by Morteza Bayareh*, Narges Jafari Ghahfarokhi & Haneen Ahmed Sahib Al-Hachami* STAM 2025-23-P: Thermofluidic Spectral Filtering for Hybrid Photovoltaic–Photothermal Conversion *by Mohit Barthwal*, Richard J. Fontenot, Dibakar Rakshit & Daniel J Preston* STAM 2025-33-P: Nondestructive Evaluation of Artificial Bone Using Highly Nonlinear Solitary Waves *by Mariam Barakat*, Tae-Yeon Kim & Andreas Schiffer* STAM 2025-45-P: Relationship between Reynolds Number and Flow-Induced Vibrations in Pipelines *by Mohamed Alfazari, Mohammed Almahri, Abdulrahman Al Ali & Mohamed Fawzy** STAM 2025-46-P: Modelling and Simulation of Cryogenic Liquid CO2 Pipeline Transportation Systems for Arid Environments *by Mohamed Fawzy, Meera Alkhyeli, Hessa Almarri, Salama Alhajri & Meera Alzaabi* STAM 2025-50-P: Aquadrone pH Analyzer *by Sarah Alabdouli, Futoun Alsamahi, Shaikha Alnaqbi & Mazoun Alnaqbi*

5 Invited Lectures

Lecture 1: Microfluidic Paper-Based Analytical Devices

Sunil Kumar
New York University Abu Dhabi, UAE
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Abstract
Microfluidic paper-based analytical devices (microPADs) are revolutionizing point-of-care testing, offering simple, low-cost diagnostic platforms. These devices are created by patterning hydrophobic barriers onto paper to form fluid channels, often using lithographic or other established protocols. Unlike conventional microfluidics, microPADs leverage the intrinsic capillary action of paper, eliminating the need for bulky supporting equipment like pumps and power sources. This inherent simplicity, combined with miniaturization and faster response times, unlocks new potential for low-cost, portable diagnostics across fields such as food safety, environmental monitoring, drug screening, and clinical diagnosis. This presentation will detail the modeling, analysis, and recent advances in the fabrication methods of microPADs, highlighting their comparative advantages.

Biography

Dr. Sunil Kumar is a Professor of Mechanical Engineering at New York University Abu Dhabi (NYUAD). He was the founding Dean of Engineering at NYUAD since 2009 until 2015, and from 2015 to 2020 the inaugural Vice Provost for Graduate and Postdoctoral Programs. Before joining NYUAD he was a Professor of Mechanical Engineering and the Dean of the Graduate School at New York University Tandon School of Engineering in Brooklyn, New York, USA. He also previously held the positions of Department Head of Mechanical, Aerospace, Manufacturing Engineering and co-Director of Energy Systems Lab. He joined New York University School of Engineering in 1990.

Prof. Kumar received his PhD in Mechanical Engineering from the University of California at Berkeley, MS in Mechanical Engineering and MA in Mathematics from the State University of New York at Buffalo, and a BTech (Hons) from the Indian Institute of Technology at Kharagpur. His areas of research are energy systems, fire dynamics, thermal and solar radiation, and the use of lasers and optics for sensing. He is a Fellow of the American Society of Mechanical Engineers and a member of The Mohammed bin Rashid Academy of Scientists.

Lecture 2: Bridging The Gap: From Research to Value Realization and Real-World Impact

Ahmad Mourad
Transmed, Abu Dhabi, UAE.
Ahmad.Mourad@transmed.com

Abstract
The journey from academic research and innovation to successful industry application is a universal challenge. While academic and R&D environments are engines of discovery, translating these innovation and ideas into commercially viable products requires navigating a complex landscape of market demands, skills, complexities, and partnerships.

Drawing on practical experience, this non-traditional session suggests a roadmap for bridging this divide. Key topics will include unstoppable trends, aligning research and innovation management with unmet needs and market opportunities, fostering effective collaborations, and managing the lifecycle. Attendees will gain insights into the unstoppable trends and how to position their research for success, ensuring their work not only advances knowledge but also delivers tangible value realization and real-world impact.

Biography

Dr. Ahmad Mourad, Chief Information Officer, Transmed, is an accomplished business and technology leader with 25+ years of corporate international experience working for the private and public sectors driving business value and results. Track record of capabilities building, frameworks, processes, and business models development. Compassionate educator and mentor inspiring and developing corporate leaders and academic scholars. Committed to building and fostering communities of learning in the classroom and beyond. Enable and support the intersection between academia, research and corporate for practical learning, application, growth and societal impact.

Lecture 3: Oxygen Deficiency Drives Drastic Pattern Transition in Algal Bioconvection

Azam Gholami
New York University Abu Dhabi, UAE.
ag9141@nyu.edu

Abstract
Suspensions of motile microorganisms can spontaneously form large-scale fluid motion, known as bioconvection, characterized by dense downwelling plumes separated by broad upwelling regions. In this study, we investigate bioconvection in shallow suspensions of Chlamydomonas reinhardtii confined within spiral-shaped boundaries, combining detailed experiments with three-dimensional simulations. Under open liquid–air interfaces, cells accumulate near the surface via negative gravitaxis, generating spiral-shaped density patterns that subsequently fragment into lattice-like clusters, leading to plume formation. Space–time analyses demonstrate coherent rotational dynamics, with predominantly inward-directed motion near the spiral core and bidirectional motion further out. Introducing confinement by sealing the upper boundary with an air-impermeable wall triggers dramatic pattern transitions due to oxygen depletion: initially stable arrangements reorganize into new structures with significantly reduced wavelengths. Complementary numerical simulations, based on incompressible Navier–Stokes equations incorporating negative buoyancy and active swimmer stress, successfully replicate initial pattern formation, subsequent instability, fragmentation into plumes, and emergence of strong vortical flows—nearly an order of magnitude faster than individual cell swimming. However, these models do not capture oxygen depletion-driven transitions observed experimentally. Our results highlight that geometric confinement, oxygen availability, and metabolic transitions critically regulate bioconvection dynamics, offering novel strategies for controlling microbial self-organization and fluid transport.

Biography

Dr Azam Gholami earned her PhD in Physics from LMU Munich and has been an Associate Professor of Physics at NYU Abu Dhabi since 2022. Her research focuses on active matter and soft-matter hydrodynamics—how simple physical rules generate complex, self-organized patterns in living and synthetic systems. Current topics include the collective behavior of cells, microswimmer physics (cilia/flagella dynamics, bioconvection), reaction–diffusion–advection processes (chemotaxis, wave guidance), and interfacial flows such as Marangoni-driven instabilities in thin films and droplets. Her group combines continuum theory with numerical simulation and experiments (high-speed imaging, particle tracking) to connect mechanisms with transport, mixing, and control, with applications to biotransport, environmental flows, and soft robotic actuation.

Lecture 4: Invariant Manifold Dynamics and Spacecraft Trajectory Design

Elena Fantino
Department of Aerospace Engineering, Khalifa University, Abu Dhabi, UAE.
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Abstract
From the resonance hopping of comets influenced by Jupiter to the deployment of cutting-edge space telescope missions, dynamical systems theory provides a powerful framework for analyzing the motion of celestial bodies within the solar system and has proven instrumental in calculating efficient spacecraft trajectories to a wide range of destinations.

Following a concise introduction to the circular restricted three-body problem, the presentation will delve into recent advancements in the use of libration point orbits and invariant manifolds for spacecraft trajectory design.

Biography

Dr. Fantino holds a degree in Astronomy and earned her Ph.D. in Space Sciences and Space Technologies from the University of Padua, Italy. Her career spans both industry and academia, with expertise in astrodynamics and celestial mechanics, space mission analysis, space geodesy, and astrometry. She has actively contributed to numerous research and development initiatives led by the Italian Space Agency and the European Space Agency. The main focus of her research is the design of trajectories for deep space missions leveraging the dynamical structures of the three-body problem and low-thrust propulsion.

Lecture 5: Exploiting Multi-Scale Dynamics in Reacting Flows

Dimitris Goussis
Department of Mechanical and Nuclear Engineering, Khalifa University, Abu Dhabi, UAE.
dimitris.goussis@ku.ac.ae

Abstract

The dynamics of the governing equations simulating reacting flows incorporate a relatively narrow spectrum of time scales characterizing the action of transport (convection and diffusion), but a very wide range of time scales characterizing the action of chemistry. This is shown convincingly in the displayed figure (from Mass and Pope, C&F 1992).

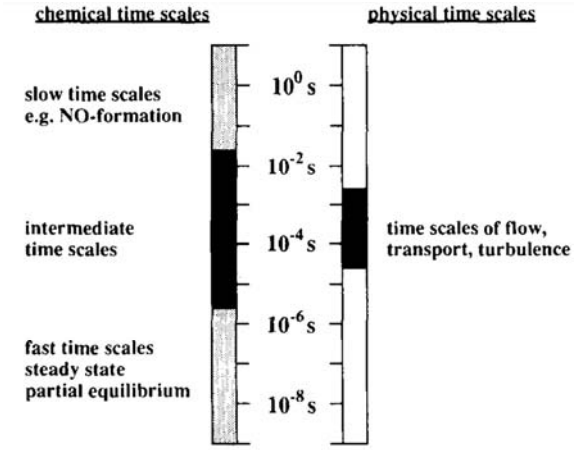

Fig. 1. Schematical illustration of the time scales governing a chemically reacting flow.

Despite the significant advances in CFD during the 70s and the 80s, the wide spectrum of chemical time scales prohibited the consideration of real chemistry in CFD codes, due to the significant stiffness that was introduced. A significant step in incorporating real chemistry effects was recorded in the mid 80s, when asymptotics were employed for the construction of simplified (non-stiff) chemical kinetics mechanisms.

Initially, these mechanisms were created by applying the Quasi Steady-State approximation for the species considered fast. However, since this methodology was relaying on the experience and intuition of the investigator, the improvement was limited. As a result, several algorithmic methodologies were introduced in order to carry-out asymptotics and produce simplified mechanisms; notably the CSP algorithm, which inspired many application-oriented ones, such as ILDM and G-Scheme. These issues will be reviewed and discussed, with an analysis of illustrative cases. It will be demonstrated that these algorithms not only facilitate the incorporation of realistic chemical effects into CFD codes but also introduce valuable algorithmic tools for acquiring significant physical understanding.

Biography

After obtaining his PhD degree from the Mechanical and Aerospace Engr. Dept. of UCLA in 1986, Dr. Dimitris Goussis joined the Dept. of Mechanical and Aerospace Engr. at Princeton University in the USA and then returned to Greece, where he joined the faculty of the Mechanical Engineering Dept. at the University of Patras and then the faculty of Applied Mathematical and Physical Sciences at the National Technical University of Athens. He joined Khalifa University in 2016.

The major focus of his work is the development of algorithmic methodologies for the acquisition of the essential physical understanding, by analyzing mathematical models related to applications in the fields of combustion, biology, pharmacokinetics, and mechanics. He has participated in a number of research projects funded by the European Commission, NASA, DoE etc.

He is a Fellow of the Combustion Institute.

Lecture 6: Fluid and Solid Mechanics in Food Technology: Where Science Meets Art

Sergey Michailovich Melnikov
IFFCO Group, UAE.
smelnikov@iffco.com

Abstract
Artisanal preparation of food has been powered for centuries by superb knowledge of food ingredients and culinary methods, creativity in flavour combination and artistic presentation of food, as well as solid understanding of food nutrition and safety. Societal shift from artisanal to processed foods was driven by industrialization, enabling mass production, increased convenience, and demand for food affordability. Fluid and solid mechanics (FSM) is integral to processed food technology, governing the behavior of food ingredients during food manufacturing, affecting food processing efficiency, as well as influencing textural and sensory attributes of food, its shelf-life, functionality and safety. FSM principles are guiding food processing equipment development and innovation, and, also, design and manufacturing of innovative packaging that meets consumer demands in terms of convenience, functionality, safety and sustainability. Processed foods supply and distribution, as well as instrumental characterization, sensory perception and digestion of food, are described and tailored by practical implementation of FSM knowledge.

In this presentation, a high-level overview of FSM role in modern processed food industry will be discussed with particular attention to the following topics: personalization of foods, mild processing, affordable nutrition, sustainability, food security and food safety. Finally, a case study on the role of decoupling fat crystallization from emulsification during manufacturing of edible w/o emulsions, which could enable next-generation innovations in processed foods, will be presented and discussed.

Biography

Dr. Sergey Melnikov graduated from Moscow State University with an MSc in Chemistry in 1993. In 1997, he earned a dual PhD in Polymer Chemistry from Moscow State University and Biophysical Chemistry from Nagoya University. He then joined Lund University as a postdoctoral fellow.

Since 1999, Dr. Melnikov has built a career in the food and beverage (F&B) industry with global multinational companies including Unilever, Ingredion, IOI Loders Croklaan, and Bunge. Since 2020, he has served as Director of Central R&D, Quality Assurance, Regulatory, and Scientific Affairs at IFFCO Group in the UAE. He brings over 30 years of experience: six years in academic research and nearly 27 years in senior leadership roles at global F&B companies.

Dr. Melnikov is the (co)author of more than 20 patents and patent applications, over 30 peer-reviewed journal publications, and three book chapters.

6 List of Oral Presentation Abstracts

- STAM 2025-02-O: Shock–Vortex Dynamics and Mixing in Fin Assisted Elliptical Jet in Crossflow at Mach 2. *by Alhanouf Eshtairy**
- STAM 2025-03-O: Passive Ventilation via Origami-Driven Stack Effect *by Zueter A.F. *, Dalaq A.S. & Daqaq M.F.*
- STAM 2025-05-O: Numerical Investigation of Static and Dynamic Response of Strut-Based Interpenetrating Phase Composites *by Kishor B. Shingare* & Kin Liao*
- STAM 2025-07-O: Biomechanical Evaluation of Surrogate Headforms with Ballistic Helmets under High-Velocity Impact *by Atul Harmukh* & Shailesh Ganpule*
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- STAM 2025-11-O: Numerical Investigation of Optimum Parameters for Two Different TPMS Inserts in Heat Transfer Applications *by Ranjit J. Singh*, Sanjairaj Vijayavenkataraman & Sunil Kumar*
- STAM 2025-13-O: Pressure-Flow Relationships in Micropipettes for High-Precision Single-Cell Studies *by Abolfazl Noh Rouzian & Majid Malboubi**
- STAM 2025-15-O: Large-Eddy Simulation of a Mach 6 Hypersonic Intake Mode: Toward Predictive Modeling of Unstart *by Kan Wang, Vinayak Rajan, Karthik Subramani & Brett Bornhoft*
- STAM 2025-16-O: Phase Field Modeling of Fracture in Fiber Reinforced Composite Plates *by Shubham Rai* & Badri Prasad Patel*
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- STAM 2025-20-O: Nano-Enhanced Thermal Storage Panels for Cubesats using Phase Change Materials: Computational Design, Physics, and Reduced-Order Modeling *by Reema Razak*, Immanuvel Paul & Simon Ching Man Yu*
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- STAM 2025-22-O: Study Heat Transfer through Fins for Heat Pipe in CubeSat Application *by Yousuf El Chihabi, MD. Islam*, Yap Yit Fatt & Firas Jarrar*
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- STAM 2025-28-O: Spectral Management in Hybrid Photovoltaic Thermal Systems: A Thermofluid Dynamics Approach *by Mohit Barthwal & Dibakar Rakshit**
- STAM 2025-30-O: Novel Hierarchical Fractal Geometries for Gypsum Scaling Control in Membrane Distillation: Computational Fluid Dynamics Approach *by Balsam Swaidan*, Immanuvel Paul & Simon Ching Man Yu*
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- STAM 2025-49-O: Numerical Investigation of Flow Dynamics Around a Heated Square Cylinder in Mixed Convection *by Mohd Perwez Ali, Nadeem Hasan & Sanjeev Sanghi*

7 List of Poster Presentation Abstracts

- STAM 2025-06-P: Numerical Simulation of a Micromixer with Semi-Circular Obstructions to Mix Blood Plasma and DI Water *by Morteza Bayareh*, Narges Jafari Ghahfarokhi & Haneen Ahmed Sahib Al-Hachami*
- STAM 2025-23-P: Thermofluidic Spectral Filtering for Hybrid Photovoltaic–Photothermal Conversion *by Mohit Barthwal*, Richard J. Fontenot, Dibakar Rakshit & Daniel J Preston*
- STAM 2025-33-P: Nondestructive Evaluation of Artificial Bone Using Highly Nonlinear Solitary Waves *by Mariam Barakat*, Tae-Yeon Kim & Andreas Schiffer*
- STAM 2025-45-P: Relationship between Reynolds Number and Flow-Induced Vibrations in Pipelines *by Mohamed Alfazari, Mohammed Almahri, Abdulrahman Al Ali & Mohamed Fawzy**
- STAM 2025-46-P: Modelling and Simulation of Cryogenic Liquid CO2 Pipeline Transportation Systems for Arid Environments *by Mohamed Fawzy, Meera Alkhyeli, Hessa Almarri, Salama Alhajri & Meera Alzaabi*
- STAM 2025-50-P: Aquadrone pH Analyzer *by Sarah Alabdouli, Futoun Alsamahi, Shaikha Alnaqbi & Mazoun Alnaqbi*