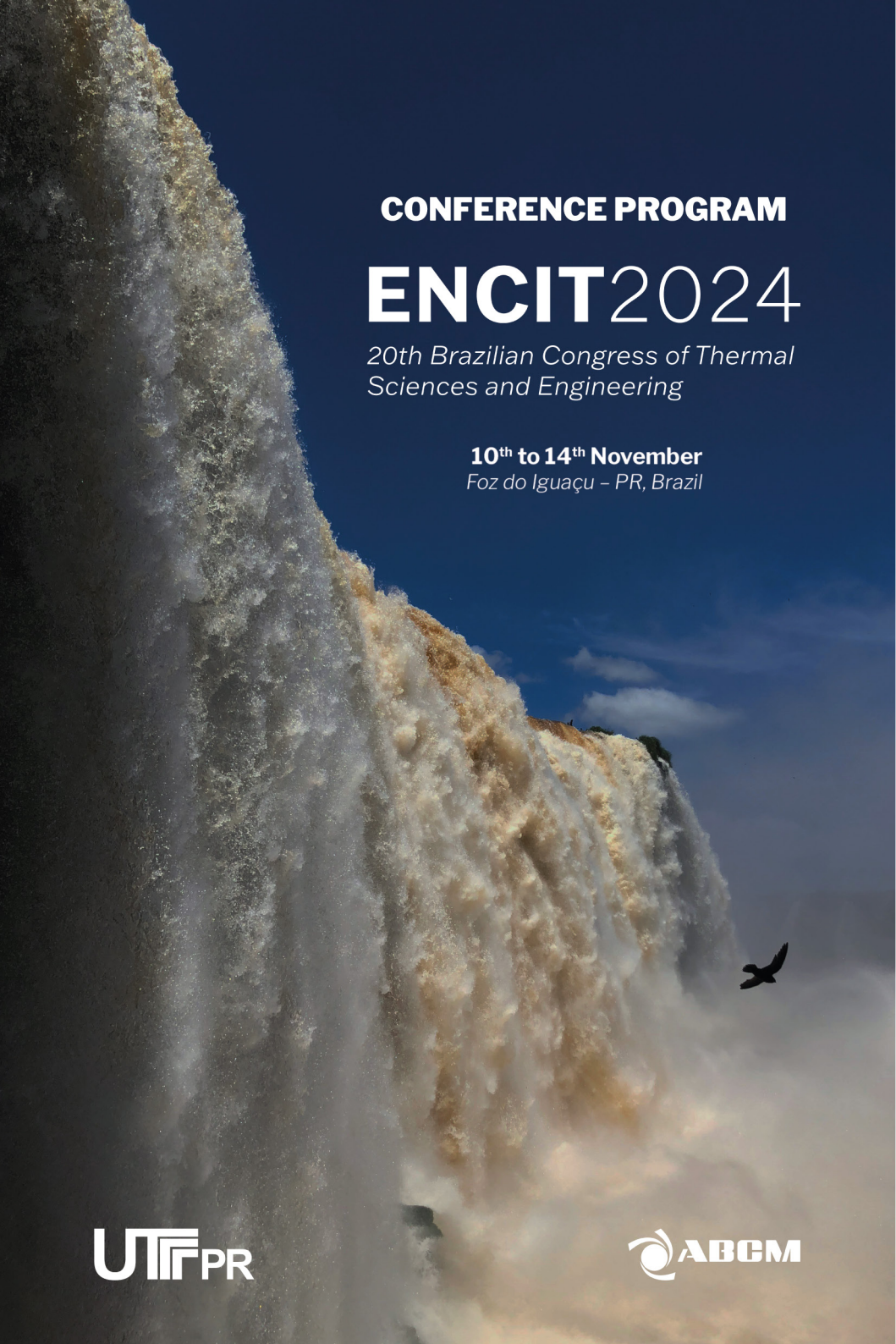

CONFERENCE PROGRAM

ENCIT2024

20th Brazilian Congress of Thermal Sciences and Engineering

10th to 14th November

Foz do Iguaçu – PR, Brazil

UTFPR

ABCM

ORGANIZATION BY

UTFPR

ABCM

SUMMARY

CHAIRS AND COMMITTEES

Rigoberto E. M. Morales
Chair
UTFPR – Federal University of Technology – Paraná
Head of NUEM – Multiphase Flow Research Center

Moises A. Marcelino Neto
Co-Chair
UTFPR – Federal University of Technology – Paraná
NUEM – Multiphase Flow Research Center

Cezar O. R. Negrão
Scientific Coordinator
UTFPR – Federal University of Technology – Paraná
CERNN Rheology

Scientific Committee

Amir Antônio Martins de Oliveira Júnior (UFSC)
Angela Ourivio Nieckele (PUC-RIO)
Antônio José da Silva Neto (IPRJ)
Carolina Palma Naveira Cotta (UFRJ)
Celso Kazuyuki Morooka (UNICAMP)
Christian Johann Losso Hermes (UFSC)
Enio Pedone Bandarra Filho (UFU)
Francis Henrique Ramos França (UFRGS)
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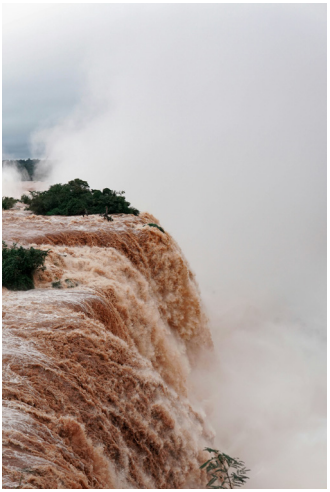
Jader Riso Barbosa Jr. (UFSC)
João Luiz Filgueiras de Azevedo (CTA/ITA)
José Viriato Coelho Vargas (UFPR)
Marcello A. Faraco de Medeiros (USP-SC)
Marcio da Silveira Carvalho (PUC-Rio)
Mônica Feijó Naccache (PUC-RJ)
Oscar Mauricio Hernandez Rodriguez (USP-SC)
Renato Machado Cotta (UFRJ)
Rudolf Huebner (UFMG)
Silvio de Oliveira Junior (USP-SP)

Organizing Committee

Rigoberto E. M. Morales *(Chair)*
Moises A. Marcelino Neto *(Co-Chair)*
Cezar O. R. Negrão *(Scientific Coordinator)*
Admilson T. Franco
Eduardo M. Germer
Eduardo N. dos Santos
Jose A. Velasquez
Laercio Javarez Jr.
Lucas F. Berti
Luciano F. S. Rossi
Marco A. Luersen
Silvio L. M. Junqueira
Henrique Stel de Azevedo



WELCOME

The Brazilian Society of Mechanical Sciences and Engineering (ABCM) invites you to be part of the 20th edition of the Brazilian Congress of Thermal Sciences and Engineering (ENCIT). This biennial gathering has become a tradition in exploring the forefront of thermal sciences.

ENCIT 2024 continues to serve as a forum for professionals from academia, research, and industry to present cutting-edge research and exchange knowledge in thermodynamics, fluid mechanics, and heat and mass transfer. The congress will feature a comprehensive program, including presentations of rigorously peer-reviewed papers and special lectures from some of the most esteemed researchers in the thermal sciences.

This 20th edition is hosted by the Federal University of Technology – Paraná (UTFPR). We are excited to welcome delegates to participate in a full schedule of events designed to foster discussion, collaboration, and inspiration among the thermal science community.

Let's celebrate two decades of scientific achievements and look forward to the advancements yet to come. Join us for an enriching experience of knowledge exchange and professional growth.

Authors are invited to submit abstracts covering, but not limited to, the following areas:

» Aerospace Engineering
» Bioengineering
» Combustion
» Decarbonisation
» Energy
» Environmental Engineering
» Fluid Mechanics
» Heat and Mass Transfer
» Heating, Ventilation, Air-Conditioning and Refrigeration
» Nano, Microfluidics and Micro-Systems
» Nuclear Engineering
» Offshore and Petroleum Engineering
» Rheology and Non-Newtonian Fluid

SYMPOSIA COORDINATORS

Aerospace Engineering
Marcello A. Faraco de Medeiros (USP-SC)
Eduardo M. Germer (UTFPR)

Bioengineering
Rudolf Huebner (UFMG)
Silvio L. M. Junqueira (UTFPR)

Combustion
Andrés Armando M. Zevallos (UFRGS)
Luciano F. dos Santos Rossi (UTFPR)

Energy and Thermal Systems
Thamy C. Hayashi (UFRGS)
Moises A. Marcelino Neto (UTFPR)

Energy Transition (Carbon Capture)
Cleverson Bringhenti (ITA)
Luciano F. dos Santos Rossi (UTFPR)

Fluid Mechanics and Rheology
Angela Ourivio Nieckele (PUC-Rio)
Henrique Stel de Azevedo (UTFPR)
Admilson Teixeira Franco (UTFPR)

Heat and Mass Transfer
Diogo E. V. Andrade (UFRGS)
Silvio L. M. Junqueira (UTFPR)

Heating, Ventilation, Air-Conditioning, and Refrigeration
Enio Pedone Bandarra Filho (UFU)
Cezar O. R. Negrão (UTFPR)

Offshore and Petroleum Engineering
Celso Kazuyuki Morooka (UNICAMP)
Moises A. Marcelino Neto (UTFPR)

Nano and Microfluidic and Micro-Systems
Debora Carneiro Moreira (USP-SC)
Cezar O. R. Negrão (UTFPR)

Nuclear Engineering
Paulo Augusto Berquó de Sampaio (IEN/CNEN)
Eduardo M. Germer (UTFPR)

KEYNOTES

James Lyke

Chief, Southern Office of Aerospace Research and Development (SOARD), Air Force Office of Scientific Research (AFOSR), Department of Defense (DoD), USA

Department of Defense Science and Technology Opportunities

(Sunday Nov 10th, 18:45)

The United States Department of Defense (DoD) has Science and Technology (S&T) Offices at each of its components (i.e. Air Force, Army, and Navy). They are leading technology research and engineering missions to empower, relieve burden, protect and support our military forces through integrated research, development, and engineering solutions. DoD S&T offices are located around the world to promote cooperation between our S&T offices and international researchers, in order to advance science, engineering, and technical capabilities relevant to the overall DoD mission. These S&T offices have a workforce of world-class scientists and engineers dedicated to solving the hardest technology problems. They are dedicated to support the discovery and transfer of technology, and assist in evaluating technologies. DoD S&T offices establish alliances with industry, agencies, academic centers, and foreign governments to maximize the use of research funds.

Matteo Bucci

Department of Nuclear Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA

Faraway, so close: High resolution investigations of boiling heat transfer, from Cryogenic Fluids to high-pressure water

(Monday Nov 11th, 08:30)

Matteo Bucci is the Esther and Harold E. Edgerton Associate Professor of Nuclear Science and Engineering at the Massachusetts Institute of Technology (MIT). His research group studies two-phase heat transfer mechanisms in nuclear reactors and space systems, develops high-resolution non-intrusive diagnostics and surface engineering techniques to enhance two-phase heat transfer, and creates machine learning tools to accelerate data analysis and conduct autonomous heat transfer experiments. He has won several awards for his research and teaching, including the MIT Ruth and Joel Spira Award for Excellence in Teaching (2020), ANS/PAI Outstanding Faculty Award (2018 and 2023), the UIT-Fluent Award (2006), the European Nuclear Education Network Award (2010), and the 2012 ANS Thermal-Hydraulics Division Award. Matteo is the founding editor and deputy Editor-in-Chief of AI Thermal Fluids. He also serves as Editor of Applied Thermal Engineering, is the founder and coordinator of the NSF Thermal Transport Café and works as a consultant for the nuclear industry.

Martin Sommerfeld

Multiphase Flow Systems, Institute of Process Engineering, Otto-von-Guericke University Magdeburg, Germany

Manipulation of Fine Particle Behaviour in Respect of Separation and Wall Depositio

(Monday Nov 11th, 14:00)

Dr. Martin Sommerfeld earned his Dipl.-Ing. degree in Aeronautical Engineering from RWTH Aachen in 1981, followed by his Ph.D. (1984) at the same institution. He gained international research experience as a fellow at Kyoto University, Japan, before leading the Two-Phase Flow group at the University of Erlangen. Since 1994, he has held a full professorship in Mechanical Process Engineering, now based at Otto-von-Guericke University Magdeburg. Dr. Sommerfeld's research is widely recognized, particularly in multiphase flow modeling, measurement techniques, and numerical predictions. He has contributed over 225 journal papers, 8 books, and numerous conference presentations. Dr. Sommerfeld is also the recipient of prestigious awards such as the DECHEMA Award and the Robert T. Knapp Award. His work has advanced the fields of computational fluid dynamics and multiphase flows, exemplified by his long-standing role as organizer of workshops and editor of significant academic volumes. He continues to focus on experimental and numerical analysis of multiphase flows using cutting-edge optical and simulation techniques.

Marcio da Silveira Carvalho

Department of Mechanical Engineering,
PUC-Rio

Microfluidics Applied to Underground Multi-phase Flow and Microencapsulation

(Tuesday Nov 12th, 08:30)

Prof. Marcio Carvalho received a B.Sc degree in Mechanical Engineering from the Military Institute of Engineering (IME) in 1989, M.Sc. degree in Mechanical Engineering from the Pontifical Catholic University of Rio de Janeiro (PUC-Rio) in 1991 and Ph.D. in Chemical Engineering from the University of Minnesota, in 1995. He worked as Senior Process Development Engineer at 3M Company and Imation Corporation (in USA) in the areas of pre--metered coating and drying technologies. In 1998, he moved back to Brazil, where he is a Professor in the Department of Mechanical Engineering at PUC-Rio. He is also a member of the Graduate Faculty in the Department of Chemical Engineering & Materials Science at the University of Minnesota since 2007. His research is focused on several aspects of capillary hydrodynamics, including coating process, non-Newtonian fluid mechanics in micro scale flows, microencapsulation, flow of complex fluids in porous media with applications in enhanced oil recovery and CO2 underground storage. Prof. Carvalho received the Young Investigator Award (2004) and the Talmadge Award (2020), both from the International Society for Coating Science and Technology (ISCST) and the ANP Technical Innovation Award in 2018. He is a level 1-A Researcher from the Brazilian Research Council (CNPq) and has published more than 130 papers in scientific journals, advised 14 postdoctoral fellows, 24 PhD thesis and 49 MSc thesis. He consults for different companies, mainly in the US and Asia in the area of coating processes. In the past few years, his research group has been mostly funded by the Brazilian Research Council (CNPq), Coordination of Superior Level Staff Improvement (CAPES), Carlos Chagas Filho Research Support Foundation (FAPERJ) and different companies from Brazil, USA and Asia, including Petrobras, Equinor, Repsol-Sinopec, Shell, 3M, Saint-Gobain, Dow, Samsung and Fuji Film.

Michael Modest

Professor Emeritus, Mechanical Engineering
University of California Merced

Radiative Heat Transfer in Combustion Systems

(Tuesday Nov 12th, 14:00)

Dr. Modest received his Dipl.-Ing. degree from the Technical University in Munich (1968), and in 1972 obtained his M.S. and Ph.D. in Mechanical Engineering from the University of California at Berkeley. For several years he taught at Rensselaer Polytechnic Institute and the University of Southern California, followed by 23 years a Professor of Mechanical Engineering at the Pennsylvania State University, from which he retired in 2009 with the title of Distinguished Professor Emeritus. He then served as Shaffer and George Professor of Engineering at the University of California, Merced, from which he retired in 2018 as Distinguished Professor Emeritus.

During his career Dr. Modest has made many seminal contributions in all areas of radiative heat transfer, as well as in the field of laser processing of materials. He is perhaps best known for his work on thermal radiation in combustion systems, and is the author of “Radiative Heat Transfer” (presently in its 4 th ed). He has over 370 refereed publications, including 2 books, 10 book chapters. He is an ASME Honorary Member and was recipient of many national and international honors, including the ASME Heat Transfer Memorial Award, the AIAA Thermophysics Award, the Intersocietal Max Jakob Memorial Award, the German Humboldt Research Award, and the Elsevier Poynting Award.

John Lienhard

PhD, PE

Professor of Mechanical Engineering

Massachusetts Institute of Technology

Thermal, membrane, and solvent separations for desalination and resource recovery

(Wednesday Nov 13th, 08:30)

H. Lienhard V is the Abdul Latif Jameel Professor and the founding Director of the Jameel Water and Food Systems Lab (J-WAFS) at MIT. During more than 35 years on the MIT faculty, Lienhard's research has focused on heat and mass transfer, water purification and desalination, and thermodynamics.

Lienhard received his BS and MS in thermal engineering at UCLA and his PhD in fluid dynamics at UC San Diego. His research on water purification has encompassed thermodynamics and transport phenomena, electrochemical and membrane separations, solvent extraction, critical materials recovery, and system design. Lienhard has supervised more than 100 graduate theses and postdoctoral associates, and he is the author of more than 300 peer-reviewed publications. He has received more than 40 US patents, most commercialized through start-up companies.

Lienhard is a Fellow of ASME, AAAS, and ASTFE. He is a registered professional engineer in Massachusetts and Vermont. Lienhard's awards include the 2012 ASME Technical Communities Globalization Medal, the 2015 ASME Heat Transfer Memorial Award, the 2019 ASME Edward F. Obert Award, and the 2021 AIChE/ASME Donald Q. Kern Award. Lienhard has also published textbooks on heat transfer, on measurement and instrumentation, and on thermal modeling. As Director of J-WAFS, Lienhard has sponsored millions of dollars of research on food and water supply for a growing population on a rapidly warming planet.

Renato Machado Cotta

Mech. Eng. Dept., POLI & COPPE, Universidade Federal do Rio de Janeiro, UFRJ
IPqM-CTMRJ, General Directorate of Nuclear and Technological Development, DGDNTM, Brazilian Navy

Combining Classical Analytical Methods and Modern Numerical Techniques: The Hybrid Approach to Simulation

(Thursday Nov 14th, 08:30)

Prof. Renato M. Cotta obtained his B.Sc. in Mechanical & Nuclear Engineering, at the Federal University of Rio de Janeiro, UFRJ, Brazil, in 1981, and his PhD in Mechanical & Aerospace Eng. from North Carolina State Univ., NCSU, USA, in 1985. He became Assistant Professor at the Aeronautics Technological Institute, ITA, Brazil, 1985-1987, then Associate Prof., at UFRJ, in 1987, and Professor, at COPPE-UFRJ in 1994, and at POLI-UFRJ in 1997, until the present. Author of more than 600 articles, 10 books, and supervisor of 49 MSc, 39 PhD, and 18 PosDocs. He is member of 15 Editorial Boards, including Int. J. Heat & Mass Transfer, Int. Comm. Heat & Mass Transfer, Int. J. Thermal Sciences, and Editor of the Annals of the Brazilian Academy of Sciences. Served as President of the Brazilian Association of Mechanical Sciences & Engineering, ABCM, from 2000-2001, as member of the Scientific Council, International Centre for Heat & Mass Transfer, ICHMT, since 1993, of the Executive Comm. ICHMT, 2006-2022, ICHMT EC Chairman, 2017-2018, and Congress Comm., Int. Union of Theoretical & Applied Mechanics, IUTAM, 2012-2018. Served as Executive Director for the Brazilian Academy of Sciences, 2012-2015. He received the ICHMT Hartnett-Irvine Award, in 2009 and 2015, the ICHMT Fellowship Award, 2019, the National Order of Scientific Merit, Brazil, in 2009 (Comendador) and 2018 (Grã-Cruz), and the National Order of Naval Merit, Brazil, 2018. In 2023, he was awarded the prestigious Luikov Medal of the ICHMT, 2022 edition. Member of the Brazilian Academy of Sciences, since 2009, National Engineering Academy, since 2011, and The World Academy of Sciences, TWAS, since 2012. Holds the Doctor Honoris Causa title from Université de Reims, URCA, France, since 2018. President of the National Commission of Nuclear Energy, CNEN, both regulatory body and science promoter in nuclear energy in Brazil, 2015-2017. Adjunct Professor at the University of Miami, 1993-2005, and Leverhulme Trust Visiting Prof. at the University College London, UCL, UK. Member of the National Council of Energy Policy, CNPE, Ministry of Mines and Energy, Brazil, 2020-2022. Member of the Technical Working Group (TWG) in Nuclear Desalination, IAEA, 2021-2024. Since 2017, is commissioned as Senior Technical Consultant (Amazul S.A.) for the General Director of Nuclear and Technological Development, in the Brazilian Navy.

SPONSORS AND PARTNERS

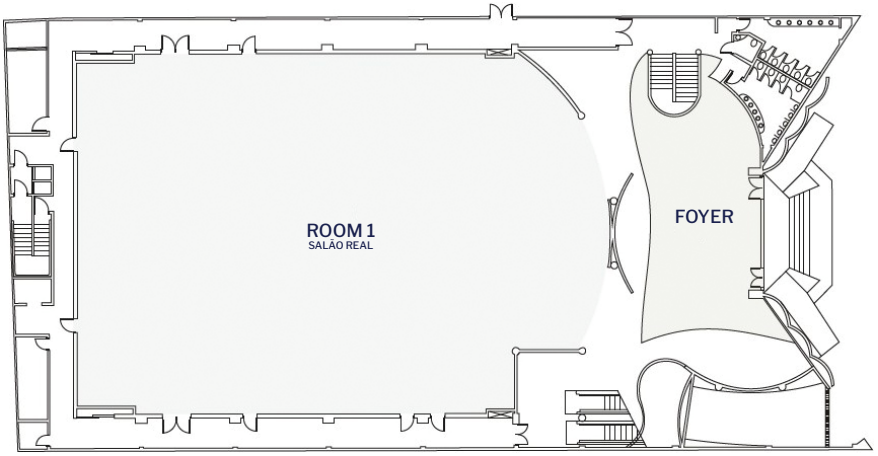
VENUE

Accommodation

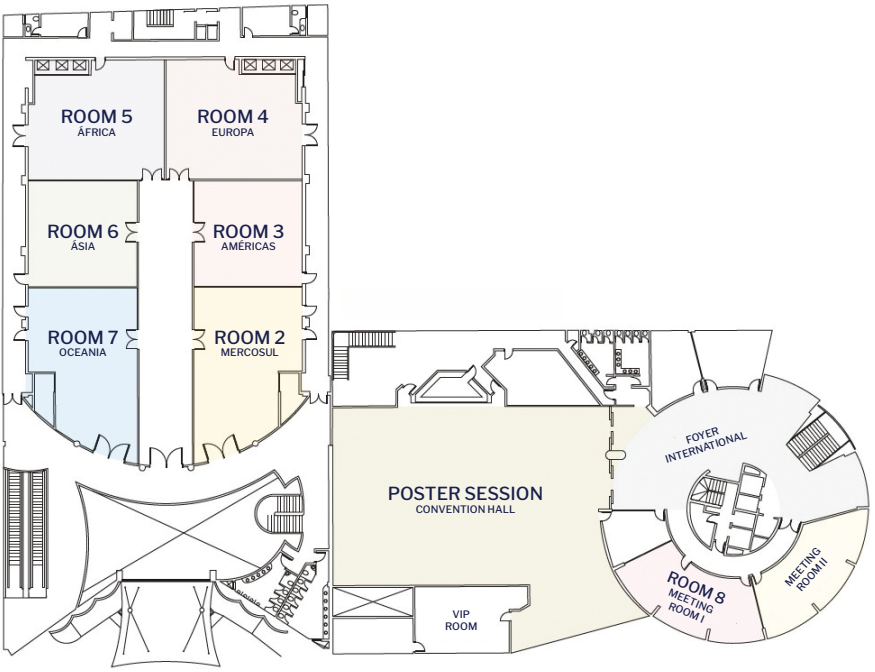
Hotel Golden Park Internacional Foz & Convenções will serve as the official accommodation for participants of the ENCIT 2024 conference. The hotel is located in the heart of Foz do Iguaçu and offers comfortable rooms, modern amenities, and convenient access to conference events.

CONFERENCE LAYOUT

GROUND FLOOR



UPPER FLOOR



Welcome to Foz do Iguaçu!

The city is located near the borders of Argentina and Paraguay. With a population of over 285,000 inhabitants, Foz do Iguaçu is a melting pot of various cultures, heavily influenced by the Brazilian, Paraguayan, and Argentinean heritages. When visiting, don't miss the top three attractions. It's famous for housing one of the world's most stunning natural wonders, the Iguazu Falls. They are undoubtedly the main attraction and features a series of massive waterfalls on the Iguazu River, which are larger and wider than Niagara Falls and have been designated a UNESCO World Heritage Site.
https://cataratasdoiguacu.com.br/

The subtropical climate contributes to the lush greenery and biodiversity of the region. You can experience close contact with the wildlife and flora at the Parque das Aves, a bird park that hosts a variety of native bird species.
https://www.parquedasaves.com.br/en/

And the Itaipu Dam, one of the world's largest hydroelectric power plants, is the world leader in clean and renewable energy generation, offering various tours through its official website.
https://turismoitaipu.com.br/en/

The city has a well-developed tourist infrastructure, with a range of hotels, restaurants, and other amenities catering to visitors from all over the world. For a safe and smooth experience, we recommend using only certified transportation services.

GOOD TO KNOW

Official language
The conference language is English.

Speaker information
Please check the date, time, and room of your contribution to the scientific program.

Each presenter will have 12 minutes to deliver their presentation. Afterward, there will be a 3-minute session for questions and answers.

Prepare your presentations in MS PowerPoint (ppt or pptx) or Adobe Acrobat (pdf) in 16:9 format. Ensure that special fonts/characters and videos are correctly integrated.

Bring a copy of your presentation on a USB flash drive for a media check as early as possible. It is advised to check it at least 2 (two) hours before your session so it can be uploaded onto the central computer system for a smooth transition between speakers. A technician will be available to assist with the upload.

Using your own notebook or any other file format for presentations is not permitted.

Poster
The poster session with a coffee break will take place on Nov 11th (Monday) and Nov 12th (Tuesday) from 16:30 to 18:00 in the exhibition area.

Authors are advised to be present at their posters during the sessions for discussions.

Time zone
Foz do Iguaçu (Brazil) is in the Brasília Time Zone (East UTC-3).

Internet
Public Wi-Fi is available for ENCIT 2024 participants free of charge. Please obtain the Wi-Fi access code from the registration desk.

Certificate of attendance
The certificate of attendance will be sent electronically to all delegates after ENCIT 2024.

SCHEDULE

Aerospace Engineering
Bioengineering
Combustion
Decarbonisation
Energy
Environmental Engineering
Fluid Mechanics
Heat and Mass Transfer
Heating, Ventilation, Air-Conditioning and Refrigeration
Nano, Microfluidics and Micro-Systems
Nuclear Engineering
Offshore and Petroleum Engineering
Rheology and Non-Newtonian Fluid

Sunday – November 10th

08:30	
09:30	
10:15	
10:40	
12:15	
14:00	
15:00	Registration
16:30	
18:00	Opening Ceremony
18:45	Keynote Lecture 1 - James Lyke
19:45	Cocktail Reception

Monday – November 11th

08:30	Keynote Lecture 2 - Matteo Bucci
09:30	Technical sessions
10:15	Coffee break
10:40	Technical sessions
12:15	Lunch
14:00	Keynote Lecture 3 - Martin Sommerfeld
15:00	Technical sessions
16:30	Coffee break + Poster Session
18:00	ABCM Committee
18:45	
19:45	

Tuesday – November 12th

08:30	Keynote Lecture 4 - Marcio S. Carvalho
09:30	Technical sessions
10:15	Coffee break
10:40	Technical sessions
12:15	Lunch
14:00	Keynote Lecture 5 - Michael Modest
15:00	Technical sessions
16:30	Coffee break + Poster Session
18:00	ABCM Plenary
18:45	
19:45	

Wednesday – November 13th

08:30	Keynote Lecture 6 - John H. Lienhard
09:30	Technical sessions
10:15	Coffee break
10:40	Technical sessions
12:15	Lunch
14:00	Visit: Iguazu Falls or Itaipu
15:00	
16:30	
18:00	
18:45	
19:45	Conference Dinner

Thursday – November 14th

08:30	Keynote Lecture 7 - Renato Machado Costa
09:30	Technical sessions
10:15	Coffee break
10:40	Technical sessions
12:15	Closing Ceremony
14:00	
15:00	
16:30	
18:00	
18:45	
19:45	

SCIENTIFIC PROGRAM

Sunday – November 10th

15:00 – 16:30	Registration
18:00	Opening Ceremony
18:45	Keynote Lecture 1
19:45	Cocktail Reception

Monday – November 11th

ROOM 1 - SALÃO REAL
CHAIR: PROF. EMILIO ERNESTO PALADINO - UFSC

09:30 – 09:45	595	The Effects Of Rotation And Drill String Eccentricity On Drilling Hydraulics – A Numerical Investigation Fluid Mechanics Computational Fluid Dynamics *Felipe Oliveira Basso*
09:45 – 10:00	621	An onset assessment of viscosity model effects on blood flow topology under pulsatile condition Fluid Mechanics Computational Fluid Dynamics *Lorenzo Ayub Salvatori*
10:00 – 10:15	104	Two-Dimensional Evaluation of Water Drip in Automotive Interiors via Numerical Simulation Fluid Mechanics Computational Fluid Dynamics *Lenon Audibert Cisco*

CHAIR: PROF. ANGELA NIECKELE - PUC-RIO

10:45 – 11:00	55	A Numerical Study Of The Flow Around A Circular Cylinder Using The Corrected Core-Spreading Method With Coalescence Scheme Fluid Mechanics Computational Fluid Dynamics *Gabriel Ferraz Marcondes de Carvalho*

11:00 – 11:15	193	**Topological Optimization based on the Finite Volume Method in conjunction with the Finite Element Method** Fluid Mechanics Computational Fluid Dynamics *Caio Patrick Picoli de Lima*
11:15 – 11:30	322	**Numerical Verification Of A Parallelized Natural Convection Flow Solution Implemented Using Cuda** Fluid Mechanics Computational Fluid Dynamics *Ernandes José Gonçalves do Nascimento*
11:30 – 11:45	582	**Exploring the Potential of Physics-informed neural networks (PINN) in Couette-Poiseuille Laminar Flow Simulations for Newtonian Fluids** Fluid Mechanics Computational Fluid Dynamics *Gyovanne Zanetti Matuchaki*
11:45 – 12:00	670	**Mathematical formulation for employing bi-viscous regularization model in CFD simulations of viscoplastic fluids in free-surface flows** Fluid Mechanics Computational Fluid Dynamics *Lorenzo Olivo Filippini*
12:00 – 12:15	590	**Finite Element Simulation of Two-Phase flows with Heat and Mass Transfer Through a Decoupled Mesh Method** Fluid Mechanics Computational Fluid Dynamics *Daniel Barbedo Vasconcelos Santos*

CHAIR: PROF. HENRIQUE STEL DE AZEVEDO - UTFPR

15:00 – 15:15 65 **Analysis of filtration efficiency in numerical simulations of biofuels combustion**
Fluid Mechanics
Computational Fluid Dynamics
Anna Bárbara Serejo Coimbra

15:15 – 15:30 198 **Computational Simulation Of The Effect Of Pressures On A Laminar Diffusion Flame**
Fluid Mechanics
Computational Fluid Dynamics
Hugo Pires Procopio

15:30 – 15:45 544 **Modeling and simulation of turbulent flow of supercritical CO2 in centrifugal compressor**
Fluid Mechanics
Computational Fluid Dynamics
Julia Matos

15:45 – 16:00 535 **Computational Fluid Dynamics Study Using Simcenter Star-Ccm+ Of A Thermal Stratification Flow In A Steam Generator Injection Pipeline**
Fluid Mechanics
Computational Fluid Dynamics
Tiago Augusto Santiago Vieira

16:00 – 16:15 584 **Numerical Analysis Of Methane Combustion In A Divergent Tube Using Openfoam**
Fluid Mechanics
Computational Fluid Dynamics
Theo Palermo

ROOM 2 - MERCOSUL
CHAIR: PROF. RAFAEL M. OLIVEIRA - PUC-RIO

09:30 – 09:45	520	On the behavior of liquid film thickness in downward vertical annular flow Fluid Mechanics Multi-phase Flow *Ana Luiza Beltrão Santana*
09:45 – 10:00	177	Assessment of slug flow characteristics in upward vertical gas-liquid flow under pressures up to 9 bara Fluid Mechanics Multi-phase Flow *Guilherme Rosário dos Santos*
10:00 – 10:15	350	Two-fluid modeling of severe slugging in a pipeline-riser system Fluid Mechanics Multi-phase Flow *Zhe Zhang*

CHAIR: PROF. EMILIO ERNESTO PALADINO - UFSC

10:45 – 11:00	331	Dynamic modeling of transient slug flow in a curved riser with a slug tracking model Fluid Mechanics Multi-phase Flow *Zhongheng Lai*
11:00 – 11:15	88	Progression and distribution of slug flow properties in a long vertical pipe Fluid Mechanics Multi-phase Flow *Gabriela Pereira Toledo*

11:15 – 11:30	506	Experimental Caractherization of Slug Flow Structures Using Capacitive Wire-Mesh Sensors in Two-Phase Flow Systems Fluid Mechanics Multi-phase Flow *Carolina Rodrigues*
11:30 – 11:45	384	ENC-2024-0384 Enhanced Modelling for Resolved Morphologies in Co-current Stratified Pipe Flows Fluid Mechanics Multi-phase Flow *Michele Cristina Pedroso*
11:45 – 12:00	257	Effect of the interfacial tension force on the transition of stratified liquid-liquid pipe flow Fluid Mechanics Multi-phase Flow *Pedro José Miranda Lugo*
12:00 – 12:15	478	Slug to stratified flow transition for high density gas phase Fluid Mechanics Multi-phase Flow *Pedro Luiz Nóbrega Machado*

CHAIR: PROF. ANGELA NIECKELE - PUC-RIO

15:00 – 15:15	78	Electrohydrodynamic flows of leaky dielectric drops: a laser velocimetry approach Fluid Mechanics Multi-phase Flow *Joel Karp*

15:15 – 15:30	98	Experimental analysis of velocity fields within the bubble wakes Fluid Mechanics Multi-phase Flow *Roberta Fatima Neumeister*
15:30 – 15:45	319	Effect of the Solid-Fluid Interface on Automated Contact Angle Measurement Methods for Micro-CT Images of Two-Phase Flow in Porous Media Fluid Mechanics Multi-phase Flow *Christoph Zevenbergen*
15:45 – 16:00	363	Convolutional neural network-based approach for PIV measurement of two-phase liquid-liquid turbulent flow inside a centrifugal pump impeller Fluid Mechanics Multi-phase Flow *Rafael Franklin Lazaro de Cerqueira*
16:00 – 16:15	732	Development of a Deep Learning-based Image Processing Technique for Local Phase Fractions of Multiphase Transient Flow Fluid Mechanics Multi-phase Flow *Jaqueline Diniz da Silva*
16:15 – 16:30	269	Experimental setup for sedimentation of weighting agents with image processing techniques Fluid Mechanics Multi-phase Flow *Amanda Chornobai Severiano*

ROOM 3 - AMÉRICAS
CHAIR: PROF. DIOGO E. V. ANDRADE - UFRGS

09:30 – 09:45	32	**Mechanical Degradation of Polymer Solutions in Extensional Laminar Flow** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Marcio Carvalho*
09:45 – 10:00	97	**Experimental Investigation Of The Shear-Induced Degradation Of Polymer Solutions** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Matheus Garros*
10:00 – 10:15	910	**Mechanical behavior of dilute ferrofluid emulsions in planar extensional flows and uniform magnetic fields** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Arthur Guilherme*

CHAIR: PROF. MONICA NACCACHE - PUC-RIO

10:45 – 11:00	566	**Rheological characterization and formation protocol of cyclopentane hydrate slurries** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics Renato Siqueira

11:00 – 11:15	254	**Influence Of Pmma Microparticles In Xg/ Hpmc And Xg/Hec Mixtures As Viscosifiers In Water-Based Drilling Fluids** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Daniel Werner Janzen*
11:15 – 11:30	255	**Rheological behavior of graphene oxide suspensions in biopolymer aqueous dispersion** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *José Carlos Canazas Rodríguez*
11:30 – 11:45	172	**Influence Of Xanthan Gum Concentration On The Thermal Sensitivity Of Water Based Drilling Fluids At High Temperature Conditions** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Emiliano Bocardo da Cruz*
11:45 – 12:00	324	**Synergistic Effect Of Xg/Hec At High Salinity Mixtures For Water-Based Drilling Fluids** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Tobias Kruger*

12:00 – 12:15	539	**Experimental Methodology For Evaluation Of Mixture Process Between Netonian And Non-Newtonian Fluids** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Jonas de Cristo*

CHAIR: PROF. GUILHERME H. FIOROT - UFRGS

15:00 – 15:15	417	**Energy harvesting from tandem circular cylinders in turbulent crossflow** Flow Induced Vibration *Patrick Habowski*
15:15 – 15:30	751	**The Finite Element Method Applied To Fluid-Structure Interaction Using The Arbitrary Lagrangian-Eulerian And The Semi-Lagrangian Methods** Flow Induced Vibration *João Paulo Innocente de Souza*
15:30 – 15:45	811	**Influence Of The High Peak Pressure Generated By Water Hammer On Composite Repair Systems For Metallic Pipes With Through-Thickness Damage** Flow Induced Vibration *Bernardo Santiago Areias*
15:45 – 16:00	913	**Conceptual Design Of A Transmission System For Baja Vehicle** Flow Induced Vibration *Ruan Pires*

16:00 – 16:15 827 Sparse Identification Of The Ginzburg-Landau Equations
Fluid Mechanics
Theoretical and Analytical Modeling
Fernanda Cordeiro

16:15 – 16:30 936 Simulation Of The Mass Transfer Process In A Porous Medium
Fluid Mechanics
Theoretical and Analytical Modeling
Victor Alexandre Bruzi

ROOM 4 - EUROPA
CHAIR: DR. DALTON BERTOLDI - UTFPR

09:30 – 09:45 412 Identification of misfire faults in a marine diesel engine using artificial machine learning and operational parameters
Energy and Thermal Systems
Thermodynamics and Thermal Systems
Felipe Thomaz

09:45 – 10:00 419 Evaluation of Solar Thermal-based Green Hydrogen Production Potential and Levelized Cost in Cataguases-MG
Energy and Thermal Systems
Thermodynamics and Thermal Systems
Fernando Jardim Borges da Cunha

10:00 – 10:15 427 Onsite Experimental Performance Evaluation of a Large Internal Combustion Engine Repowering Combining Both Waste Heat Recovery and Absorption Chiller for Intake Air Cooling and Dehumidification
Energy and Thermal Systems
Thermodynamics and Thermal Systems
Andre Chun

CHAIR: PROF. CRISTIANO BIGONHA TIBIRIÇA - USP

10:45 – 11:00	449	Thermal model for the evaluation of refrigerant charging and discharging process Energy and Thermal Systems Thermodynamics and Thermal Systems *Mateus Henrique Corrêa*
11:00 – 11:15	465	Analysis of the nuclear fission heat generation equation and heat transfer in a nuclear reactor Energy and Thermal Systems Thermodynamics and Thermal Systems *Felipe Pfahl*
11:15 – 11:30	491	Assessment of the thermal and Carbon footprint performance of a renewable simple and recompressed supercritical carbon dioxide Brayton cycles using an organic rankine cycle as waste heat recovery system. Energy and Thermal Systems Thermodynamics and Thermal Systems *Victor Merlano*
11:30 – 11:45	507	Gas Hydrate Management In Crude Oil Under Multiphase Flow Conditions In High Salinity Systems Energy and Thermal Systems Thermodynamics and Thermal Systems *Luiz Fernando Santos De Vasconcelos*
11:45 – 12:00	543	Design, production and testing of a magnetic field with four magnetic field regions applied to a rotary thermomagnetic motor. Energy and Thermal Systems Thermodynamics and Thermal Systems *Dalila Torres*

12:00 – 12:15	575	Energetic and exergetic assessment of a sugarcane ethanol cogeneration plant Energy and Thermal Systems Thermodynamics and Thermal Systems *Pedro Henrique Castro Alves*

CHAIR: PROF. ELAINE MARIA CARDOSO - UNESP

15:00 – 15:15	579	Thermodynamic Evaluation Of Steam Turbine Cogeneration System Configurations For Thermal And Chemical Waste Energy Recovery In The Electric Furnaces Of A Carbochemical Company In Brazil Energy and Thermal Systems Thermodynamics and Thermal Systems *Francisco Mello Fonseca*
15:15 – 15:30	634	Numerical Modeling of a Phase Change Material (PCM) - Based Passive Heat Exchanger Integrated with a Finned Heat Sink Energy and Thermal Systems Thermodynamics and Thermal Systems *Luis Gonçalves*
15:30 – 15:45	639	Thermodynamic Analysis of Helium Liquefier through Computational Simulations Energy and Thermal Systems Thermodynamics and Thermal Systems *Henrique Fragoso da Silva*
15:45 – 16:00	15	Thermal Performance Study Of A Lithium-Ion Battery For Electrical Vehicles Heat and Mass Transfer Applied Heat and Mass Transfer *Sabrina Chichinelli*

ROOM 5 - ÁFRICA
CHAIR: PROF. EDUARDO GERMER - UTFPR

09:30 – 09:45	116	A Study on S1223 Airfoil Optimization via Differential Evolution and Panel Methods Aerospace Engineering Aerodynamics Gustavo Chaves Carraro
09:45 – 10:00	144	Flow Analysis Over A Highly Cambered Airfoil At Low Reynolds Aerospace Engineering Aerodynamics Thales Ferreira
10:00 – 10:15	274	Thin Airfoil in Ground Effect under an Alternative Form for the Kutta Condition. Aerospace Engineering Aerodynamics *Karl Peter Burr*

CHAIR: PROF. RUDOLF HUEBNER - UFMG

10:45 – 11:00	347	Airfoil Aerodynamic Shape Optimization using a Discrete Adjoint Approach Aerospace Engineering Aerodynamics *Juliano Moreira Maurer*

11:00 – 11:15	941	Airfoil flow analysis under conditions close to stall: a practical study for identification and characterization of the separation bubble Aerospace Engineering Aerodynamics *Renan Trevizan de Melo*
11:15 – 11:30	758	Evaluation Of Windkessel Model Versus Percentage Outflow As Boundary Conditions On The Aorta Flow Field Bioengineering *Angela Nieckele*
11:30 – 11:45	76	Assessing Stent Geometry in Coronary Angioplasty: A Study of FSI vs. CFD Modeling Bioengineering *Kristian Nascimento Telöken*
11:45 – 12:00	366	Temperature In Bioprinting Process Induces Precision In Fabrication Of Scaffolds Bioengineering *Thiago Wenk*
12:00 – 12:15	381	Numerical assessment of hemodynamic changes in recurrent intracranial aneurysms after endovascular embolization Bioengineering Maria Gabriella Pegaiane

CHAIR: PROF. EDUARDO GERMER - UTFPR

15:00 – 15:15	40	Innovative Solutions: The Role of Stirling Engines in Advancing Space Propulsion Technologies Aerospace Engineering Propulsion *Juliana Aparecida Araújo*

15:15 – 15:30	168	Time series fitting using knot theory for SINDy Aerospace Engineering Propulsion *Davi Saadi de Almeida Lettieri*
15:30 – 15:45	453	Characterization of Paraffin-LDPE Blended Fuels Aerospace Engineering Propulsion *Rafael Coelho*
15:45 – 16:00	657	Experimental Study Of Hydrodynamic Instabilities In Liquid Films Of Pressure Swirl Injectors Aerospace Engineering Propulsion *Igor Paccini Silva*
16:00 – 16:15	771	Effect Of Fiber Inclination Angle On The Effective Specific Heat Of A Composite Applied To A Solid Rocket Motor Envelope Aerospace Engineering Propulsion *Humberto Machado*
16:15 – 16:30	559	Numerical Analysis of a Detonation-Driven Gas Gun for Hypersonic Launches Aerospace Engineering Propulsion *Douglas Bortolotti Tagawa*

ROOM 6 - ÁSIA
CHAIR: PROF. SILVIO JUNQUEIRA - UTFPR

09:30 – 09:45	239	Radiative Heat Transfer in Supercritical CO2 Brayton Cycle: Evaluation of WSGG Model Heat and Mass Transfer Heat and Mass Transfer Fundamentals *Vitor Olson*
09:45 – 10:00	445	Investigation of dissipated energy during droplet impact on heated surfaces with water and ethanol Heat and Mass Transfer Heat and Mass Transfer Fundamentals *Arthur Vieira da Silva Oliveira*
10:00 – 10:15	450	Shape-Sensitivity Analysis of Laminar Forced Convection in Rough in Micro-channels Heat and Mass Transfer Heat and Mass Transfer Fundamentals *Leandro Alcoforado Sphaier*

CHAIR: PROF. MARCELO R. ERRERA - UFPR

10:45 – 11:00	476	Experimental Evaluation Of The Liquid Film Thickness Transient Behavior Using High-Speed Diagnostics Heat and Mass Transfer Heat and Mass Transfer Fundamentals *Maurício Marinheiro*
11:00 – 11:15	596	Optimizing Heat Exchanger Design: Optimizing Efficiency and Sustainability Through Additive Manufacturing Heat and Mass Transfer Heat and Mass Transfer Fundamentals *Keferson Carvalho*

11:15 – 11:30	766	Experimental investigation of a mini-channel cold plates for lithium-ion battery thermal management system Heat and Mass Transfer Heat and Mass Transfer Fundamentals *Arthur Gabriel Torres*
11:30 – 11:45	795	Investigation of the Thermomagnetic Effect on the Heat Exchanger of a Thermoacoustic Engine Through CFD with MHD Modeling Heat and Mass Transfer Heat and Mass Transfer Fundamentals *Geovane Costa Clemente*
11:45 – 12:00	632	Assessment of Design Alternatives for Contamination Reduction in Operating Rooms: A Numerical Approach Heat and Mass Transfer Heat and Mass Transfer Fundamentals *Federico Licandro*
12:00 – 12:15	785	CFD Simulation of a Centrifugal Liquid-Gas Separator: Euler-Euler Biphase Method Application Fluid Mechanics Multi-phase Flow *Thiago Vicznevski*

CHAIR: PROF. THAMY CRISTINA HAYASHI - UFRGS

15:00 – 15:15	25	Development of a semi-analytic coupled model for conjugate natural convection heat transfer Heat and Mass Transfer Numerical Heat and Mass Transfer *Guilherme Santos Machado*

15:15 – 15:30	66	**Optimal experimental design for thermophysical properties estimation using the Quadrilateral Optimizaion Method (QOM) with accelerated GPU implementation** Heat and Mass Transfer Numerical Heat and Mass Transfer *Ariel Flores Monteiro de Oliveira*
15:30 – 15:45	763	**Numerical Analysis of the Volumetric Heating of a Lithium-Ion Battery Pack: An Alternative Approach** Heat and Mass Transfer Numerical Heat and Mass Transfer *Giovani Dambros*
15:45 – 16:00	280	**Numerical Analysis Of The Thermal Behavior In A Thermite-Based Through-Tubing Solution For Oil Well Plug And Abandonment** Heat and Mass Transfer Numerical Heat and Mass Transfer *Fabrício Pena*
16:00 – 16:15	296	**A Thermal Network Model for Printed Circuit Boards with Copper Traces** Heat and Mass Transfer Numerical Heat and Mass Transfer *Aron Martins Ferreira Milagres*
16:15 – 16:30	261	**Automatic and Online Kalman Filter Tuning for Estimation of High Magnitude Heat Fluxes** Heat and Mass Transfer Numerical Heat and Mass Transfer *César Pacheco*

ROOM 7 - OCEANIA
CHAIR: DR. ERNESTO MANCILLA - UTFPR

09:30 – 09:45	408	A Digital Twin For Monitoring Drilling Operations: A Decade-Long Successful Operation Offshore and Petroleum Engineering *Rodrigo Yugi Ikuta Tobisawa*
09:45 – 10:00	87	Airfoil Optimization For Enhancing Wind Turbine Performance Offshore and Petroleum Engineering *João Victor Barros dos Santos*
10:00 – 10:15	108	Influence of Gravity Segregation on Oil Recovery for WAG Injection in a Typical Pre-Salt Reservoir Offshore and Petroleum Engineering *Clewerton Braga*

CHAIR: PROF. RAFAEL FRANKLIN LÁZARO DE CERQUEIRA - UFSC

10:45 – 11:00	115	Analysis of the Thermite Propagation Front Velocity in Tubes for Wellbore Plugging and Abandonment operation Offshore and Petroleum Engineering *Bruno de Campos Salles Anselmo*
11:00 – 11:15	171	Experimental Unit for Evaluation of Drag Force in the Removal of Offshore Oil Production Column Offshore and Petroleum Engineering *Pedro Maestro*
11:15 – 11:30	205	Numerical Model and Computer Simulation for Offshore Floating Platforms of Reduced Vertical Oscillations in Waves Offshore and Petroleum Engineering *Pedro Kalid Bacellar*

11:30 – 11:45	421	Experimental Study Of The Temperature And Reynolds Number Influence On Calcium Carbonate Scaling Deposition Inside A 65-Meter Flow Loop Offshore and Petroleum Engineering *Juliana Ferreira Gonçalves*
11:45 – 12:00	902	Heat Transfer In A Wellbore With Lost Circulation: Model And Scale Analysis Offshore and Petroleum Engineering *James Romano*
12:00 – 12:15	886	Cfd-Dem Simulation Of Scale Formation In Capillary Tubes Based On The Tube Blocking Test Offshore and Petroleum Engineering *João Vitor Faidiga Silva*

CHAIR: PROF. OSCAR MAURÍCIO HERNANDEZ RODRIGUEZ - USP

15:00 – 15:15	209	Direct-Inverse Problem Analysis and Uncertainty Quantification of Relative Permeability on Unsteady-State Core Flooding Experiment Offshore and Petroleum Engineering *Gianfranco Stieven*
15:15 – 15:30	258	Virtual Sensing of Vibration Responses in an Electrical Submersible Pump Operating in a Test Well Offshore and Petroleum Engineering *Henrique Andrade Oliveira Santos*
15:30 – 15:45	270	Mathematical Modeling for Application in the Oil Production Column Entrapment in Offshore Wells Using Rheological Models Offshore and Petroleum Engineering *Nathan Lins de Andrade*

15:45 – 16:00	273	Design of an Experimental Apparatus for Evaluating Annular Pressure Build-Up in Oil and Gas Wells Offshore and Petroleum Engineering *Alan Nakashima*
16:00 – 16:15	305	Experimental evaluation of scaling inhibitor associated with magnetic field for mitigation of calcium carbonate scaling in hydrocyclones Offshore and Petroleum Engineering *Andrei Hünemeyer Dullius*

ROOM 8 - MEETING ROOM I
CHAIR: PROF. OSCAR MAURÍCIO HERNANDEZ RODRIGUEZ - USP

09:30 – 09:45	459	Impact Of Impurities On Co2 Transport Relevant To Ccs Systems: Insights From 1-D Simulations Decarbonisation Carbon capture, utilization and storage *Jader Barbosa*
09:45 – 10:00	485	Energy Transition in Oil and Gas Industry: Greenhouse Gas Emissions and Carbon Capture Utilization and Storage (CCUS) in the Oil and Gas Reserves Estimates Decarbonisation Carbon capture, utilization and storage *Alexandre Carvalho Costa*

10:00 – 10:15	834	Experimental Evaluation Of The Performance Of A Centrifugal Pump Operating With Supercritical Co2 Decarbonisation Carbon capture, utilization and storage *Jhoan M.C. Cubas*

CHAIR: PROF. ALEXANDRE KUPKA DA SILVA - UFSC

10:45 – 11:00	943	Machine Learning Aided Methodology Of Carbon Capture Materials Discovery Decarbonisation Carbon capture, utilization and storage *Marcelo Risso Errera*
11:00 – 11:15	937	Assessing Energy Usage: A Diagnostic Model Approach to Energy Efficiency Decarbonisation Energy efficiency *Lara Werncke Vieira*
11:15 – 11:30	43	Development of Microencapsulated Phase Change Materials for Energy Efficiency Applications Decarbonisation Energy efficiency *Caio vinicius Santos Cartaxo*
11:30 – 11:45	178	Analysis of the performance of Energy Saving Devices to improve energy efficiency on merchant vessels Decarbonisation Energy efficiency *Marlon Silva*

11:45 – 12:00	211	Repowering and Energy Efficiency as a Strategy for Decarbonization and Energy Transition At Steel Industry Utilities Decarbonisation Energy efficiency *Andre Chun*

CHAIR: PROF. FABIO TOSHIO KANIZAWA - UNICAMP

15:00 – 15:15	264	Use Of Alkalized Cotton Fabric Membranes Foranion Exchange Membrane Fuel Cell Decarbonisation Fuel cell *Luiza Natel*
15:15 – 15:30	300	Preliminary study of alkalized membranes for anion exchange membrane fuel cell Decarbonisation Fuel cell *Fábio Furtado*
15:30 – 15:45	517	Sensitivy Analysis of Electrochemical Modeling Parameters on PEMFC Polarization Curve Decarbonisation Fuel cell *Tamayo Zanforlin Pires de Almeida Motta Dias*

15:45 – 16:00	69	A mathematical model of risk management in a device for generating hydrogen Decarbonisation Hydrogen *Luiz Assumpção*
16:00 – 16:15	74	Decarbonization Of The Green Hydrogen Supply Chain: Conceptualization And Guidance For Application Decarbonisation Hydrogen *Pedro Veiga Santos*
16:15 – 16:30	83	Energy Performance and Emissions Assessment in the use of Aviation Kerosene and Hydrogen in an Aeronautical Engine. Decarbonisation Hydrogen *Pedro Afonso Cassani Martins*

Tuesday – November 12th

CHAIR: PROF. RAFAEL M. OLIVEIRA - PUC-RIO
ROOM 1 - SALÃO REAL

09:30 – 09:45	7	Numerical Simulations Of Flow In A Proton Exchange Membrane Fuel Cell Fluid Mechanics Computational Fluid Dynamics *Gabriela Barbosa*
09:45 – 10:00	456	Fem Model For Stratified Turbulent Flows For Bio-Reactor Applications Fluid Mechanics Computational Fluid Dynamics *Ygor Ares Monteiro*

10:00 – 10:15	416	**Numerical Analysis Of Two-Phase Flows In A Micro-Reactor For Biodiesel Production** Fluid Mechanics Computational Fluid Dynamics *Antonio Emanuel Marques dos Santos*

CHAIR: PROF. ANGELA NIECKELE - PUC-RIO

10:45 – 11:00	121	**Innovative design analysis of helical vertical axis wind turbine** Fluid Mechanics Computational Fluid Dynamics *Danilo Albuquerque Ribeiro*
11:00 – 11:15	134	**Influence Of Blade Pitch Angle On Torque Generation In H-Darrieus Turbines** Fluid Mechanics Computational Fluid Dynamics *Ramiro Bertolina*
11:15 – 11:30	345	**Cfd Modeling Of Wind Turbine Wakes In A Wind Farm Using The Actuator Line Method** Fluid Mechanics Computational Fluid Dynamics *Genaro Montoya Juarez*
11:30 – 11:45	394	**Uav Propeller Performance Prediction Through Computational Fluid Dynamics** Fluid Mechanics Computational Fluid Dynamics *Jose Maurício Passos Vieira*
11:45 – 12:00	909	**Novel Force Distribution Method for Enhanced Wind Turbine Simulations Using Actuator Line Models** Fluid Mechanics Computational Fluid Dynamics *Matheus Nunes*

12:00 – 12:15 238 **CFD Analysis of Center of Mass modification in Floating Offshore Wind Turbines subjected to regular waves.**
Fluid Mechanics
Computational Fluid Dynamics
Daniel Pavan Parra

CHAIR: PROF. MARCIO CARVALHO - PUC-RIO

15:00 – 15:15 93 **Numerical Study Of The Angular Variation Effect At The 155 Mm Projectile Trailing Edge**
Fluid Mechanics
Computational Fluid Dynamics
Rodrigo de Azevedo Rodrigues Paulo

15:15 – 15:30 94 **Evaluation Aerodynamic Coefficients For Ss T-09 Ts Fin Profile**
Fluid Mechanics
Computational Fluid Dynamics
Victor Santoro Santiago

15:30 – 15:45 829 **Numerical Investigation of the Supersonic Flow Upstream of a Cylinder Using a Thermally Coupled Fluid-Solid Model**
Fluid Mechanics
Computational Fluid Dynamics
Juan Carlos Assis da Silva

15:45 – 16:00 641 **Effect Of Pitch Motion On The Aerodynamic Wake Of A Floating Darrieus Wind Turbine**
Fluid Mechanics
Computational Fluid Dynamics
Pericles Nicolau Balafa

16:00 – 16:15 395 Metamaterial Cloak For Drag Reduction In Creeping Flow Over Blunt Bodies
Fluid Mechanics
Computational Fluid Dynamics
Daniel Rubano Barretto Turci

ROOM 2 - MERCOSUL
CHAIR: DR. JOEL KARP - UTFPR

09:30 – 09:45 371 A Unified Model for Steady-State Two-Phase Gas-Liquid Flows for Pipes with Any Angle of Inclination
Fluid Mechanics
Multi-phase Flow
Pedro Pimentel Nascimento

09:45 – 10:00 475 Experimental Analysis of the Influence of the Gas Density on Slug Flow Parameters in a Horizontal Pipe
Fluid Mechanics
Multi-phase Flow
Dalton Bertoldi

10:00 – 10:15 691 Study of the influence of hydrate-like particles in oil-air stratified flow
Fluid Mechanics
Multi-phase Flow
Vitor Otávio Ochoski Machado

CHAIR: PROF. RICARDO AUGUSTO MAZZA - UNICAMP

10:45 – 11:00 213 Experimental Analysis Of Particle Dynamics During Erosion In Impinging Jet Systems
Fluid Mechanics
Multi-phase Flow
Miguel Linhares dos Santos

11:00 – 11:15	594	Study of the influence of hydrate-like particles in the oil-air slug flow pattern Fluid Mechanics Multi-phase Flow *Paúl Delgado*
11:15 – 11:30	463	Mathematical model for displacement flow of immiscible fluids Fluid Mechanics Multi-phase Flow *Rafaella Casado Silva*
11:30 – 11:45	460	Experimental study of the flushing process in horizontal pipes Fluid Mechanics Multi-phase Flow *Elcilane Freitas*
11:45 – 12:00	276	Nonlinear pattern formation in lifting Hele-Shaw flows Fluid Mechanics Multi-phase Flow *Rafael Menezes de Oliveira*
12:00 – 12:15	247	Experimental characterization of large heavy particle dynamics in wall-bounded turbulence Fluid Mechanics Multi-phase Flow *Robert Jäckel*

CHAIR: PROF. RAFAEL FRANKLIN LÁZARO DE CERQUEIRA - UFSC

15:00 – 15:15	642	Beyond Nyquist limit through a triple-PRT scheme for Ultrasonic Velocity Profiling applied to fluid engineering Fluid Mechanics Instrumentation and Experiments *Fabio Rizental Coutinho*

15:15 – 15:30	202	The influence of vane-hub gap in the performance of a centrifugal compressor with vaned diffuser Fluid Mechanics Industrial Applications and Turbomachinery *Rafael Eller*
15:30 – 15:45	571	Identification Of Efficiency Degradation Of Centrifugal Compressors With The Aid Of Machine Learning Fluid Mechanics Industrial Applications and Turbomachinery *Guilherme Geremia*
15:45 – 16:00	864	Hydrodynamic And Thermal Fem Model Of Blast Furnace Cooling System Fluid Mechanics Industrial Applications and Turbomachinery *Norberto Mangiavacchi*
16:00 – 16:15	230	The Impact of Leading-Edge Blade Shape on Efficiency and Flow Dynamics of Centrifugal Compressors Fluid Mechanics Industrial Applications and Turbomachinery *Bruno José Nagy Antonio*
16:15 – 16:30	747	Experimental, Analytical And Numerical Analysis Of The Pressure Drop In Diffusion Bonded Heat Exchanger Fluid Mechanics Instrumentation and Experiments *Gian Marcos Gatti*

ROOM 3 - AMÉRICAS
CHAIR: PROF. CRISTIANO BIGONHA TIBIRIÇA - USP

09:30 – 09:45 1 Assessment of the resilience of cogeneration systems applied to a hospital
Energy and Thermal Systems
Thermodynamics and Thermal Systems
José Alexandre Matelli

09:45 – 10:00 16 Numerical Study Of The Fluid Flow And Heat Transfer In A Rotary Thermomagnetic Motor
Energy and Thermal Systems
Thermodynamics and Thermal Systems
Pedro Antonio Diniz Chaves

10:00 – 10:15 79 Rotary thermomagnetic motor prototype with a fin rotor: preliminary results
Energy and Thermal Systems
Thermodynamics and Thermal Systems
Clara Silva

CHAIR: PROF. MARIA LAURA MARTINS-COSTA - UFF

10:45 – 11:00 173 Numerical Simulation of Extrudate Swell and Jet Buckling for K-BKZ Fluids
Fluid Mechanics
Rheology and Non-Newtonian Fluid Mechanics
Manoel Silvino Batalha De Araujo

11:00 – 11:15 234 Neural Network Applied To Predict Viscosity Fields And Yield Surfaces For Bingham Fluids Flowing Over Cylinder Arrangements
Fluid Mechanics
Rheology and Non-Newtonian Fluid Mechanics
Eduardo Henrique Taube Cunegatto

11:15 – 11:30	110	A Comparative Study and Critical Analysis of Measurement Uncertainty in Velocity Profile of Laminar Flow of Viscoplastic Fluid. Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Glaucio Kenji Matoba*
11:30 – 11:45	119	Numerical heat transfer analysis of continuously variable transmission for a Baja-SAE vehicle in quiescent air. Heat and Mass Transfer Applied Heat and Mass Transfer *Murilo Andriotti*
11:45 – 12:00	181	Thermal Performance of a Loop Heat Pipe for Portable Electronic Gadgets Heat and Mass Transfer Applied Heat and Mass Transfer *Larissa Krambeck*
12:00 – 12:15	767	Analysis of different PCM compositions applied to battery cooling Heat and Mass Transfer Applied Heat and Mass Transfer *Gabriel Rossger*

CHAIR: PROF. TAYGOARA OLIVEIRA - UNB

15:00 – 15:15	717	Evaluation of rheological properties of CO2 hydrate suspension for application in CCS Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Ronald Antunes Gomes*

15:15 – 15:30	433	**Effect of droplet size distribution on the rheology and stability of water-in-oil emulsions** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Monica Naccache*
15:30 – 15:45	9	**Drop Rise, Interfacial Collision, And Film Drainage Initial Stage In Elasto-Viscoplastic Materials** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Lucas Henrique Pagoto Deoclecio*
15:45 – 16:00	60	**Drop Rise, Interfacial Collision, And Film Thinning Initial Stage In Viscoelastic Materials** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Lucas Henrique Pagoto Deoclecio*
16:00 – 16:15	48	**Free surface flows with Boussinesq-Scriven viscous interfaces** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Ivan Siqueira*
16:15 – 16:30	39	**Three-Dimensional Flow of Thixotropic Liquids in Slot Coating Die** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Stélio Henrique Lopes*

ROOM 4 - EUROPA
CHAIR: PROF. MARCELO ERRERA - UFPR

09:30 – 09:45	14	Parameters Of Energetic Of Bioethanol Production And Electricity At The Cogeneration Unit Energy and Thermal Systems Biofuels and Renewable Energy *Eduardo José Cidade Cavalcanti*
09:45 – 10:00	101	Forecasting Global and Direct Solar Irradiance with Machine Learning Algorithms: Insights from Recursive Feature Selection and SHAP Analysis Energy and Thermal Systems Biofuels and Renewable Energy *Paulo Alexandre Costa Rocha*
10:00 – 10:15	150	Study of the influence of the excess air coefficient and the concentration of green hydrogen in CNG and biomethane on a bi-fuel engine's performance parameters and emissions Energy and Thermal Systems Biofuels and Renewable Energy *Yoshi Tsugawa*

CHAIR: PROF. ELAINE MARIA CARDOSO - UNESP

10:45 – 11:00	151	Use Of Forest Residues: A Process Of Energy Generation And High-Value Biomaterials Evaluation Energy and Thermal Systems Biofuels and Renewable Energy *Gilvana Scoculi de Lira*

11:00 – 11:15	212	Numerical Simulation Of Turbulent Flow In Natural Channels Energy and Thermal Systems Biofuels and Renewable Energy *Kaajal Gopie*
11:15 – 11:30	275	Operational optimization of a bi-fuel turbocharged engine using biomethane with and without the addition of H2G as an alternative fuel to CNG. Energy and Thermal Systems Biofuels and Renewable Energy *Gabriel Willian Moreira Bezerra*
11:30 – 11:45	744	Salt stress of microalgae Tetradesmus obliquus for biomass accumulation Energy and Thermal Systems Biofuels and Renewable Energy *Luana Passarin*
11:45 – 12:00	423	Recovery Of Nutrients Through Membrane Crystallization Coupled With Solar Thermal And Photovoltaic Energy: Challenges And Opportunities Energy and Thermal Systems Biofuels and Renewable Energy *Guilherme Diniz*
12:00 – 12:15	312	Feasibility Study Of Implementing A Hybrid Thermal Ptc-Msw Power Plant For Electricity Generation In The State Of Espírito Santo Energy and Thermal Systems Biofuels and Renewable Energy *Francisco Mello Fonseca*

CHAIR: PROF. MÁRCIA BARBOSA HENRIQUES MANTELLI - UFSC

15:00 – 15:15	697	**Thermodynamic And Environmental Analysis Of Clean Energy System Oxy-Fuel Combustion Power Plant** Energy and Thermal Systems Thermodynamics and Thermal Systems *Antonio Gallego*
15:15 – 15:30	722	**Process simulation and performance assessment of an energy-integrated system comprising a solid-state hydrogen storage tank and proton exchange membrane fuel cells** Energy and Thermal Systems Thermodynamics and Thermal Systems *Hugo Valença de Araújo*
15:30 – 15:45	749	**Numerical analysis of organic Rankine cycle with R514a** Energy and Thermal Systems Thermodynamics and Thermal Systems *Juliana Silva Brasil*
15:45 – 16:00	815	**Finite-Time Air-Standard And Air-Fuel Beau De Rochas Models With Chemical Kinetics Couplings For Thermodynamic Engine Simulations** Energy and Thermal Systems Thermodynamics and Thermal Systems *Gabriel Bianek*
16:00 – 16:15	819	**Influence Of Temperature Measurement Accuracy On Heat Flux Determination For Phase Change Experiments: Numerical Simulation Analysis** Energy and Thermal Systems Thermodynamics and Thermal Systems *Gabriel Chahad*

16:15 – 16:30 946 **Algorithm Development For Sizing Of A Geothermal Condensation Heat Exchanger Refrigeration System Coil**
Energy and Thermal Systems
Thermodynamics and Thermal Systems
Joao Alves de Lima

ROOM 5 - ÁFRICA
CHAIR: PROF. EDUARDO GERMER - UTFPR

09:30 – 09:45 256 **Weather Projections and Their Impact on Building Performance in Curitiba (Brazil)**
Heat and Mass Transfer
Applied Heat and Mass Transfer
Yuri Prestes Rehme

09:45 – 10:00 601 **Experimental Analysis Of Finned Thermosyphons Using Thermoelectric Generators For Heat Recovery Applications**
Heat and Mass Transfer
Applied Heat and Mass Transfer
Allefe Chagas Vaz

10:00 – 10:15 75 **Single droplet impact regime mapping via two different optical technique perspectives**
Heat and Mass Transfer
Applied Heat and Mass Transfer
Alvaro Felipe Campos Araya

CHAIR: PROF. FLÁVIA ZINANI - UFRGS

10:45 – 11:00 615 **Analysis Of Error In Transient Temperature Measurements Using Thermocouple**
Heat and Mass Transfer
Applied Heat and Mass Transfer
Fábio Silva Faria

11:00 – 11:15	761	In-situ estimation of calorimetric curves of phase change materials Heat and Mass Transfer Applied Heat and Mass Transfer *Kleber Marques Lisbôa*
11:15 – 11:30	854	Effect of Flow Orientation on Pressure Drop During Convective Boiling in a Microstructered Heat Sink with Open Tapered Manifold. Heat and Mass Transfer Applied Heat and Mass Transfer *Alexandre Garcia Costa*
11:30 – 11:45	426	Pressure Swirl Injectors Spray Interaction Through Analytical Techniques for Liquid Rocket Engines Aerospace Engineering Propulsion *Maurício Sá Gontijo*
11:45 – 12:00	862	Determination Of Constants For Propellant Grain Regression Model Through Bayesian Inference Aerospace Engineering Propulsion *Norberto Mangiavacchi*
12:00 – 12:15	501	Dynamic-thermodynamic coupling of a hypersonic vehicle Aerospace Engineering Propulsion *Guilherme Ribeiro*

CHAIR: PROF. KARL PETER BURR - UFABC

15:00 – 15:15	149	**Aerodynamic performance analysis of a wingtip propeller** Aerospace Engineering Aerodynamics *Maria Veronica Meneghetti Bomfim*
15:15 – 15:30	330	**On the definition of a simulation model to assess tonal noise and aerodynamics from small propellers using OpenFOAM** Aerospace Engineering Aerodynamics *Filipe Dutra da Silva*
15:30 – 15:45	403	**A Study on Propeller-Wing Interaction and the Analysis of the Effect of Blockage on Propeller Performance** Aerospace Engineering Aerodynamics *Thiago Teodosio*
15:45 – 16:00	557	**Enhancing Experimental and Numerical Data Validation through Acoustic Noise Signal Demodulation for Estimating Drone Propeller Rotational Speed** Aerospace Engineering Aerodynamics *Gabriel Costa da Silva*
16:00 – 16:15	72	**Experimental Measurements Of An Uav Propeller Wake** Aerospace Engineering Aerodynamics *Pamela Cristyne da Silva Martins*
16:15 – 16:30	214	**Uavs Optimization By Metaheuristics** Aerospace Engineering Aerodynamics *Jean Carlos Guedes Souza*

ROOM 6 - ÁSIA
CHAIR: PROF. GUILHERME RIBEIRO - ITA

09:30 – 09:45	446	**Generating A Typical Meteorological Year For A Weather Station In Rio De Janeiro.** Heating, Ventilation, Air-Conditioning and Refrigeration HVAC *Marcio Barbosa França Junior*
09:45 – 10:00	607	**Comparative analysis of housing construction solutions based on measurements** Heating, Ventilation, Air-Conditioning and Refrigeration HVAC *Gabriel Pena Vergara*
10:00 – 10:15	609	**Thermodynamic evaluation of the evolution of the performance of a large-scale magnetic refrigeration system** Heating, Ventilation, Air-Conditioning and Refrigeration Refrigeration *Guilherme Fidelis Peixer*

CHAIR: PROF. GUILHERME RIBEIRO - ITA

10:45 – 11:00	85	**Comparative Exergetic Analysis of the Modernization of Synthetic Refrigerant R-22 by Natural Fluid R-290 on a Test Bench with Residential Chiller System** Heating, Ventilation, Air-Conditioning and Refrigeration Refrigeration *Gabriel Barbosa*

11:00 – 11:15	692	**Numerical study on the storage time of a cylindrical vaccine transport box** Heating, Ventilation, Air-Conditioning and Refrigeration Refrigeration *Robert Jäckel*
11:15 – 11:30	711	**Development of linear compressors for a two-stage cascade ultra-low temperature freezer** Heating, Ventilation, Air-Conditioning and Refrigeration Refrigeration *Ernane Silva*
11:30 – 11:45	10	**Characterization of the freezing process of droplets on cold surfaces using optical techniques.** Heat and Mass Transfer Heat and Mass Transfer Fundamentals *Murillo Augusto Correa Masculi*
11:45 – 12:00	514	**Experimental determination of methane diffusivity in dodecane under hydrate formation conditions** Heat and Mass Transfer Heat and Mass Transfer Fundamentals *Thales Sirino*
12:00 – 12:15	623	**On the Role of Fractional Derivatives in the Modelling of Engineering Problems** Heat and Mass Transfer Heat and Mass Transfer Fundamentals *Ariel Patriota*

CHAIR: PAULO AUGUSTO BERQUO DE SAMPAIO - CNEN

15:00 – 15:15	369	Thermodynamic Analysis of Cogeneration of Electricity and Industrial Heat in a Floating Nuclear Power Plant Nuclear Engineering *Natacha Gonçalves Camargo*
15:15 – 15:30	523	A Computational Model For Desalination Using Hollow Fibre Direct Contact Membrane Distillation (DCMD) Nuclear Engineering *Paulo Augusto Berquo de Sampaio*
15:30 – 15:45	527	Exploring Thorium-Based Fuels in Small Modular Reactors: Neutronic Analysis and Safety Considerations in a NuScale-like Core Nuclear Engineering *Keferson Carvalho*
15:45 – 16:00	907	One-dimensional two-phase homogeneous flow model for a vertical heated pipe Nuclear Engineering *Mateo Augusto Acevedo Onieva*
16:00 – 16:15	379	Thermalhydraulic Analysis of a Dual-Cooled Annular Fuel Cool with Neutronic Coupling Nuclear Engineering *Juliana Campos Salgado*
16:15 – 16:30	708	Neutronic Analysis of a Thorium-based ADS Nuclear Engineering *Geovana Loren da Cruz*

ROOM 7 - OCEANIA
CHAIR: DR. ERNESTO MANCILLA - UTFPR

09:30 – 09:45	332	Assessment of Porosity and Permeability REV from Micro-CT Images of Sandstone and Carbonate Rocks Offshore and Petroleum Engineering *Bernardo Gehlen*
09:45 – 10:00	869	Advancements in Lightweight Drilling Fluids: Formulations, Characterization, Rheology, and Applications Offshore and Petroleum Engineering *Marcos Vinícius Costa*
10:00 – 10:15	44	Characterization of two-dimensional reservoirs combining pressure and temperature data using Ensemble Smoother with Multiple Data Assimilation methodology. Offshore and Petroleum Engineering *José Adriano Cardoso*

CHAIR: DR. FABRÍCIO SOARES DA SILVA - CENPES/PETROBRAS

10:45 – 11:00	410	On the thermodynamic consistency of thermal conductivity mixing models for drilling fluids Offshore and Petroleum Engineering *Mariana Cunha*
11:00 – 11:15	418	The Roadmap for the Implementation of The Technology of Magnetic Subs for Downhole Scale Mitigation Offshore and Petroleum Engineering *Andre Leibsohn Martins*

11:15 – 11:30	895	Calcium Carbonate Formation Within The Oil And Gas Workflow: A Combined Thermodynamic, Kinetic, And Cfd Modeling Approach For Smart Completion Systems Offshore and Petroleum Engineering *Vinicius Gustavo Poletto*
11:30 – 11:45	528	Thermophysical Properties Of High Co2 Mixtures: Experiments And Theory Offshore and Petroleum Engineering *Erich Takenore Tiuman*
11:45 – 12:00	603	Assessment of deep-learning techniques for anomaly detection in offshore oil wells Offshore and Petroleum Engineering *Guilherme Fidelis Peixer*
12:00 – 12:15	650	Mathematical Model to Predict Transient Annular Pressure Change During Flow Restart Offshore and Petroleum Engineering *Ricardo Knesebeck*

CHAIR: DR. WILSON MANTOVANI GRAVA - CENPES/PETROBRAS

15:00 – 15:15	702	Validation of a Transient Model for CO2 Injection Wellbores using Literature Data Offshore and Petroleum Engineering *Bernardo Vieira*
15:15 – 15:30	709	Asphaltene Deposition In Capillary Tubes Offshore and Petroleum Engineering *Jorge Luis Esteban Pinco*
15:30 – 15:45	719	Scale Formation In Extreme Conditions Of High Salt Concentration Offshore and Petroleum Engineering *Bruno Lopes Barboza*

15:45 – 16:00 723 Calcium Carbonate Depositions In Inflow Control Devices
Offshore and Petroleum Engineering
Paulo Henrique De Sousa Silva

16:00 – 16:15 772 Emulsion injection through fractured porous media at Pore scale
Offshore and Petroleum Engineering
Alandmara Rosa Dionizio Leôncio

16:15 – 16:30 826 A systematic comparison of wellbore heat transfer simulators
Offshore and Petroleum Engineering
Jader Barbosa

ROOM 8 - MEETING ROOM I
CHAIR: DR. ANA LUIZA BELTRÃO SANTANA - UTFPR

09:30 – 09:45 165 The impact of frequency analysis results on the definition of input data to model fire risk consequences in a green hydrogen production and storage system
Decarbonisation
Hydrogen
Barbara Siqueira

09:45 – 10:00 174 Comparative Study Of The Primary Energy Factor In Hydrogen Electricity Production In Brazil, The United States And Denmark
Decarbonisation
Hydrogen
Fabiana de Marqui Mantovan

10:00 – 10:15 185 Development and Characterization of a Mobile Power Generation System from Sustainable Hydrogen Production
Decarbonisation
Hydrogen
Henrique Guerra

CHAIR: PROF. ARTHUR VIEIRA DA SILVA OLIVEIRA - USP

10:45 – 11:00	194	Exploring the Efficiency of Diesel Cycle Engines with Diesel and Hydrogen Blends: An Experimental Study Decarbonisation Hydrogen *Carlos Henrique Matiolo*
11:00 – 11:15	201	Energetic and Exergetic Assessment of CSP-CCGT Integration for Hydrogen Production and Use in Power Generation Decarbonisation Hydrogen *Leonardo Ribeiro de Paula*
11:15 – 11:30	221	Hybrid Multi-Scale Multiphase Flow Modeling For Oxygen Removal In Proton Exchange Membrane Electrolyzers Decarbonisation Hydrogen *Vittorio Nardin*
11:30 – 11:45	266	Parametric Analysis and Optimization of a Sustainable Hydrogen Generation System Using Aluminum Waste in a Pilot-scale Reactor Decarbonisation Hydrogen *Dhyogo Miléo Taher*
11:45 – 12:00	278	Analysis and Perspectives of Sustainable Hydrogen Generation at Airports for On-Site Energy Production and Consumption in Aircraft Decarbonisation Hydrogen *Kauana Alessandra dos Santos*

12:00 – 12:15	295	Technical And Economic Potential Of Decentralized Hydrogen Production Using The Brazilian Electrical Grid As An Integrator Decarbonisation Hydrogen *Vinicius Rugeri Borges Bonini*

CHAIR: PROF. ALEXANDRE KUPKA DA SILVA - UFSC

15:00 – 15:15	442	Liquefied Gas Mixtures Optimization for Sustainable Hydrogen Liquefaction Decarbonisation Hydrogen Yogan Felipe Sganzerla
15:15 – 15:30	526	An Estimative Of Hydrogen Price At The Pump For Fuel Stations In Florianopolis Decarbonisation Hydrogen *Luiz H. Silva Junior*
15:30 – 15:45	536	Design Requirements For The Development Of A Hydrogen Gas Turbine Annular Combustor Decarbonisation Hydrogen *Mayara Salgado*
15:45 – 16:00	576	Sustainable Hydrogen Production through Aluminum Utilization in Alkaline Solution and Electrolysis: A Comparative Perspective Decarbonisation Hydrogen *Rhuan Araujo*

16:00 – 16:15	831	**Comparative analysis of pre- and post-compression strategies for PEM H2 generation through thermodynamic and thermo-economic assessment with focus on decentralized production** Decarbonisation Hydrogen *Emilio Paladino*
16:15 – 16:30	837	**Hydrogen Production And Black Carbon From Methane Using A Dielectric Barrier Discharge Plasma Reactor** Decarbonisation Hydrogen *José Roberto Simões Moreira*

Wednesday – November 13th

ROOM 1 - SALÃO REAL
CHAIR: DR. ANDRE LEIBSOHN MARTINS - CENPES/PETROBRAS

09:30 – 09:45	882	**Numerical investigation of pollutant dispersion in street canyons using OpenFOAM** Fluid Mechanics Computational Fluid Dynamics *Arthur França Martins*
09:45 – 10:00	877	**Efficiency Evaluation Of Rdtw Stand Alone Screens (SAS) For Sand Production Using Cfd-Dem** Fluid Mechanics Computational Fluid Dynamics *Vinicius Gustavo Poletto*

10:00 – 10:15	656	**Design and numerical investigation of trapezoidal micro-pin fins for cooling systems** Fluid Mechanics Computational Fluid Dynamics *Ligia Paola Velandia*

CHAIR: PROF. TAYGOARA OLIVEIRA - UNB

10:45 – 11:00	67	**Turbulent flow around a surface-mounted cube using the lattice Boltzmann method - Evaluation of moment based outflow boundary conditions** Fluid Mechanics Computational Fluid Dynamics *Marco Aurélio Ferrari*
11:00 – 11:15	323	**3-D Laminar Backward Facing Step Simulations Through an Immersed Boundary-Fourier Pseudospectral Methodology** Fluid Mechanics Computational Fluid Dynamics *Thiago Fernando Santiago de Freitas*
11:15 – 11:30	262	**An analysis regarding the use of the LBM method in external flow** Fluid Mechanics Computational Fluid Dynamics *Flávio Hirai Garzeri*
11:30 – 11:45	184	**The use of an accelerator algorithm to study the flow around a bluff body through a Lagrangian approach** Fluid Mechanics Computational Fluid Dynamics *Marília Vidille*

11:45 – 12:00	890	Couette Flow Simulation Using Lattice Boltzmann Method Fluid Mechanics Computational Fluid Dynamics *Leonardo Demmer Knippenberg*
12:00 – 12:15	117	Study of Vortex-Temperature Interactions Applied for Aircraft Wake Vortices in Vicinity of Heated Ground Plane: The Advection Problem Solution using Different Schemes to Integrate the Particles Trajectory. Fluid Mechanics Computational Fluid Dynamics *Tiago Raimundo Chiaradia*

ROOM 2 - MERCOSUL
CHAIR: PROF. ARTHUR V. S. OLIVEIRA - USP

09:30 – 09:45	49	High-speed liquid thermography by laser-induced fluorescence: first results Fluid Mechanics Instrumentation and Experiments *Pedro Stefano Veronese*
09:45 – 10:00	695	Experimental Analysis Of The Influence Of The Interfacial Tension In The Formation Of Compound Droplets In Water Inside A Model Flotator With The Use Of Surfactants Fluid Mechanics Instrumentation and Experiments *Pedro Morales*

10:00 – 10:15	146	Flow pattern classification in air-water horizontal flows using confocal chromatic microscopy Fluid Mechanics Instrumentation and Experiments *Cristiano Tibiriçá*

CHAIR: PROF. OSCAR MAURÍCIO HERNANDEZ RODRIGUEZ - USP

10:45 – 11:00	246	Distributed Dual Modality Impedance Sensor for Multiphase Flow Monitoring and Characterization Fluid Mechanics Instrumentation and Experiments *Natan Schieck Reginaldo*
11:00 – 11:15	411	Characterization of a Low-Frequency Pulsatile Piezoelectric Pump Fluid Mechanics Instrumentation and Experiments *Alan Neves*
11:15 – 11:30	468	Ultrasound Doppler Velocimetry Evaluation and Simulation Validation of a Multiphase Flow Generated by a Rock-Flow Cell Fluid Mechanics Instrumentation and Experiments *Andre Stakowian*
11:30 – 11:45	191	Pressure Drop Predictions In Intermittent Flows For Horizontal Air/Non-Newtonian Bingham Plastic Fluids Fluid Mechanics Multi-phase Flow *Rafael Cordebela*

11:45 – 12:00 81 **Experimental Study On Dense-Gas/Liquid Flow In Horizontal And Inclined Pipes**
Fluid Mechanics
Multi-phase Flow
Carlos Mauricio Ruiz Diaz

12:00 – 12:15 640 **Experimental investigation of air-water flow pattern for horizontal flow in tubes with forced vibration**
Fluid Mechanics
Multi-phase Flow
Fabio Toshio Kanizawa

ROOM 3 - AMÉRICAS
CHAIR: DR. JOEL KARP - UTFPR

09:30 – 09:45 259 **Energy And Exergy Analysis Of A Power Plant Fed By Sugarcane Bagasse And Natural Gas Operating With A Hybrid Combined Cycle**
Energy and Thermal Systems
Thermodynamics and Thermal Systems
Leandro Andrade Furtado

09:45 – 10:00 309 **Experimental Evaluation Of A Linear Thermomagnetic Motor Coupled To A Spring Mechanism**
Energy and Thermal Systems
Thermodynamics and Thermal Systems
Higor Caldas Rios

10:00 – 10:15 316 **Parameter identification in photovoltaic thermal systems**
Energy and Thermal Systems
Thermodynamics and Thermal Systems
Gabriel Rabelo Thomaz

CHAIR: PROF. AMIR ANTÔNIO MARTINS OLIVEIRA JR. - UFSC

10:45 – 11:00		***Invited talk: Multiscale study of flow and heat transfer across interfaces*** ***Prof. Dr. Dongsheng Wen (Technical University of Munich)***
11:15 – 11:30	367	Low Computation Cost Thermal Risk Assessment Model For Aircraft Equipment Energy and Thermal Systems Thermodynamics and Thermal Systems *Filipe Maia Nunes Celestino*
11:30 – 11:45	80	Methodology Proposal For Clinker Kiln Energy Balance Energy and Thermal Systems Thermodynamics and Thermal Systems *Lúcio Camargo*
11:45 – 12:00	89	Potential Of Cogeneration Systems To Improve Energy In A Hospital Energy and Thermal Systems Thermodynamics and Thermal Systems *Marco Antonio de Amorim*
12:00 – 12:15	206	Sustainable innovation: Development and analysis of a test bench for hydrogen engines Energy and Thermal Systems Thermodynamics and Thermal Systems *Beatriz das Graças Kochan Ferreira*

ROOM 4 - EUROPA
CHAIR: DR. ANA LUIZA BELTRÃO SANTANA - UTFPR

09:30 – 09:45	313	Utilization of Tetradesmus obliquus biomass as alternative source of Fe for maize and soybean. Energy and Thermal Systems Biofuels and Renewable Energy *Ezequias Ferreira*
09:45 – 10:00	317	Analysis of microalgae growth in heterotrophic medium with addition of glucose and nitrate to increase biomass productivity Energy and Thermal Systems Biofuels and Renewable Energy *Ana Júlia Ferreira Ganda*
10:00 – 10:15	325	Surface reflectivity as a function of incidence angle for concentrated solar energy application Energy and Thermal Systems Biofuels and Renewable Energy *Miguel Queiroz Viveiros Gomes*

CHAIR: PROF. DEBORA CARNEIRO MOREIRA - USP

10:45 – 11:00	337	Progress in hydrogen production: a review of solar-driven high-temperature electrolysis systems Energy and Thermal Systems Biofuels and Renewable Energy *Silvio de Oliveira Junior*
11:00 – 11:15	339	Effects of applying Tetradesmus oliquus biomass on wheat growth in compacted soil conditions Energy and Thermal Systems Biofuels and Renewable Energy *Caroline Rusch Schulze*

11:15 – 11:30	773	Green Hydrogen Production From Brazilian Landfills: Technical And Economic Issues Energy and Thermal Systems Biofuels and Renewable Energy *Regina Franciélle Silva Paulino*
11:30 – 11:45	388	Experimental Analysis of Photovoltaic-Panel Energy Balance Energy and Thermal Systems Biofuels and Renewable Energy *Mario Benjamim Baptista de Siqueira*
11:45 – 12:00	311	Biomass algae (Tetradesmus obliquus) as potential biofertilizer: application in vegetable species to increase plant growth. Energy and Thermal Systems Biofuels and Renewable Energy *Ana Letícia Anderman*
12:00 – 12:15	440	Advancements and Challenges in Energy-Efficient Microalgae Cultivation for Sustainable Biofuel Production Energy and Thermal Systems Biofuels and Renewable Energy *Gabriela Conor Figueiredo*

ROOM 5 - ÁFRICA
CHAIR: PROF. KARL PETER BURR - UFABC

09:30 – 09:45	28	Influence of the Control Temperature of Park's Two-Temperature Model on the Mars Pathfinder Reactive Hypersonic Flow Aerospace Engineering Aerodynamics *Gibson De Marchi Poltronieri*

09:45 – 10:00	927	Evaluation And Verification Of The Impact Of Various Mesh Configurations On The Cfd Simulation Outcomes For An Optimized Hypersonic Waverider Aerospace Engineering Aerodynamics *Rolando Guzmán-Bohórquez*
10:00 – 10:15	875	Supersonic Aerodynamics Of Projectiles With Base Bleed Propellants Aerospace Engineering Aerodynamics *Norberto Mangiavacchi*

CHAIR: PROF. JOÃO L. AZEVEDO - ITA

10:45 – 11:00	736	Validation of Non-viscous Flow Approach for Generic Future Fighter Aerospace Engineering Aerodynamics *Adson De Paula*
11:00 – 11:15	817	Wind Tunnel Measurements Of Air Flow Around Cylinders With Splitter Plates At Low Reynolds Number Aerospace Engineering Aerodynamics *Breno Lopes Tumelero*
11:15 – 11:30	534	CFD Application to Analyze Aerothermodynamic Parameters in Flows with Propulsive Jet Aerospace Engineering Aerodynamics *Humberto Machado*

11:30 – 11:45	19	**Design, Manufacture And Test Of A Static And Dynamic Bench For Thrust Determination Of Uav's Brushless Engines** Aerospace Engineering Aerodynamics *Fillipi Augusto Fernandes Rizzi*
11:45 – 12:00	176	**A SU2 and Nastran Interaction framework for evaluating the static aeroelastic behavior of very flexible wings** Aerospace Engineering Aerodynamics *Caio Ladeia Costa Alves*
12:00 – 12:15	629	**Wind Influence On Droplets Distribution From Rpa's Spraying In Agricultural Settings** Aerospace Engineering Aerodynamics *Pedro Madureira*

ROOM 6 - ÁSIA
CHAIR: DR. NEZIA DE ROSSO - UTFPR

09:30 – 09:45	47	**Subcooled Flow Boiling Heat Transfer Coefficient Data In A Microchannel At High Mass Velocities** Nano and Microfluidic and Micro-Systems Experimental methods in micro and nano-systems *Thalles Coimbra Borba Roldão*
09:45 – 10:00	100	**Evaluation Of Vapor Bubble Dynamics In Microchannel Porous Fins For Enhanced Boiling Heat Transfer** Nano and Microfluidic and Micro-Systems Experimental methods in micro and nano-systems *Arthur Vilaronga*

10:00 – 10:15	109	Controlled sodium silicate gelation through encapsulation of hydrochloric acid for fracture sealing Nano and Microfluidic and Micro-Systems Experimental methods in micro and nano-systems *Ademir Medeiros*

CHAIR: DR. NEZIA DE ROSSO - UTFPR

10:45 – 11:00	297	Thermohydraulic Performance Of Nanofluids In Sudden Contraction Nano and Microfluidic and Micro-Systems Experimental methods in micro and nano-systems *Felipe Silva dos Santos*
11:00 – 11:15	135	Analysis Of Conjugated Internal Convection In Microchannels Via Integral Transforms Nano and Microfluidic and Micro-Systems Simulation approaches in micro and nanoengineering *Daniel Chalhub*
11:15 – 11:30	222	1D Simulation of Nanofluid Thermal Radiation: Effect of Nanoparticles Nano and Microfluidic and Micro-Systems Simulation approaches in micro and nanoengineering *Pedro Henrique de Souza*
11:30 – 11:45	560	Energy evaluation of an absorption refrigerator using nanofluids in the secondary system Nano and Microfluidic and Micro-Systems Simulation approaches in micro and nanoengineering *Wesley Argolo*

ROOM 7 - OCEANIA
CHAIR: PROF. GHERHARDT RIBATSKI - USP

09:30 – 09:45	846	Numerical Investigation of Paraffin Phase Change Induced Shrinkage Offshore and Petroleum Engineering *Denis Barbosa Barbara*
09:45 – 10:00	361	The influence of pass-flow rate of deficient shutdown valves on the consequences of fires assessed through the integrity of primary structures on an offshore platform Offshore and Petroleum Engineering *Barbara Siqueira*
10:00 – 10:15	870	Discrete Element Method Calibration To Characterize Adhesion Forces In Calcium Carbonate Agglomeration Offshore and Petroleum Engineering *Felipe Pereira*

CHAIR: PROF. EMILIO ERNESTO PALADINO - UFSC

10:45 – 11:00	873	Effects Of Surface Roughness On The Viv Investigated Across Different Experimental Setups Offshore and Petroleum Engineering *Karen Soares*
11:00 – 11:15	878	Heat Transfer Simulation Of Turbulent Flow In Interval Control Valves – ICV Offshore and Petroleum Engineering *João Clarindo*

11:15 – 11:30	855	Investigating Laminar Burning Velocity In Ammonia-Hydrogen Mixtures Using Different Kinetic Mechanisms Combustion Chemical Kinetics and Modeling *Danilo Almeida Machado*
11:30 – 11:45	934	Two-Step Chemical Mechanism for Ethanol-air Premixed Flames Combustion Chemical Kinetics and Modeling *Andreza Costa*
11:45 – 12:00	41	Stirling Power: A Multi-Objective Optimization Approach for Advancing Space Station Energy Systems Aerospace Engineering Propulsion *Juliana Aparecida Araújo*
12:00 – 12:15	380	Thermal-Hydraulic Analysis Of Steady-State Two-Phase Natural Circulation In A BWR Nuclear Engineering *Mayara Francisca Reis de Souza*

ROOM 8 - MEETING ROOM I
CHAIR: PROF. AMIR ANTÔNIO MARTINS OLIVEIRA JR. - UFSC

09:30 – 09:45	469	Cost And Placement Of Solar Green Hydrogen Production Stations To Supply Fcev Fleet Growth In Brazilian States Decarbonisation Low-carbon fuels *Leonardo Pereira Felicidade*

09:45 – 10:00	470	Estimating Total Cost Related To Using EVS Or ICEVS With Different Energy And Fuel Sources In Each Brazilian State Decarbonisation Low-carbon fuels *Arthur Martins Farias*
10:00 – 10:15	473	A regional approach to estimating economic and environmental impacts when running a vehicle with ethanol in Brazil Decarbonisation Low-carbon fuels *Pedro Tomasi Pedroso*

CHAIR: PROF. RAFAEL FRANKLIN LÁZARO DE CERQUEIRA - UFSC

10:45 – 11:00	486	Potential of hydrogen – compressed natural gas (HCNG) blends as fuel in SACI engines to decarbonize efficiently the mobility sector: a numerical study Combustion Engine Combustion *Rayanne Nascimento*
11:00 – 11:15	500	Assessment of Emissions and Fuel Consumption in Heavy Trucks: Implications of Biodiesel Blending in Brazil's Fleet Combustion Engine Combustion *Fábio Lisboa*
11:15 – 11:30	930	Preliminary Study Of Large-Scale Optimization Of Hydrogen Production From Aluminum Decarbonisation Hydrogen *Eduarda Zeni Neves*

11:30 – 11:45	871	**Waste management in the transition to sustainable energy from hydrogen generation through metal-mediated reactions** Decarbonisation Hydrogen *Beatriz Jacob Furlan*
11:45 – 12:00	931	**Study on Seawater Desalination Using Hybrid OTEC Technology in Fernando de Noronha Island** Decarbonisation Renewable energies *Armando Hideki Shinohara*
12:00 – 12:15	336	**Thermo-Economic And Environmental Feasibility Analysis Of Alternatives For Energy Transition And Decarbonization In A Chocolate Factory Utilities** Decarbonisation Industrial electrification *José Joaquim Conceição Soares Santos*

Thursday – November 14th

CHAIR: PROF. HENRIQUE STEL DE AZEVEDO - UTFPR
ROOM 1 - SALÃO REAL

09:30 – 09:45	365	**Evaluation of the Influence of Fire-Induced Temperature Profiles in Offshore Hydrogen Production Facilities: Simulation-Based CFD Analysis** Fluid Mechanics Computational Fluid Dynamics *Leonardo Nunes Pereira*

09:45 – 10:00	659	**Investigating RPC Aging: Computational Models and Insights for Enhanced Detector Longevity** Fluid Mechanics Computational Fluid Dynamics *Isis Mota*
10:00 – 10:15	606	**Thermal Dynamics of High-Voltage Power Transformers: A Computational Fluid Dynamics Approach** Fluid Mechanics Computational Fluid Dynamics *João Pedro Furlan do Prado*

CHAIR: PROF. HENRIQUE STEL DE AZEVEDO - UTFPR

10:45 – 11:00	95	**Numerical Investigation Of Bingham Fluid Flow In A Partially Porous Channel** Fluid Mechanics Computational Fluid Dynamics *Lucas Raone*
11:00 – 11:15	356	**Numerical Investigation of the Effects of Granular Media on Steady and Acoustic Fluid Flow Behavior** Fluid Mechanics Computational Fluid Dynamics *Gabriel Rozo*
11:15 – 11:30	466	**Validation of CFD Simulations using the Darcy-Forchheimer Model against Experimental Data for Bag Filters** Fluid Mechanics Computational Fluid Dynamics *Lucas Borges Menezes*

11:30 – 11:45	393	**CFD-DEM simulation of filter cake formation in dynamic filtration over heterogeneous porous medium analyzing batch particle injection** Fluid Mechanics Computational Fluid Dynamics *Ayrton Cavallini Zotelle*
11:45 – 12:00	679	**A computational model for simulating static filtration process with particle deposition and external filter cake build-up** Fluid Mechanics Computational Fluid Dynamics *Pedro Kropf de Azevedo*
12:00 – 12:15	542	**Numerical simulation of single phase flow throught thin orifices** Fluid Mechanics Computational Fluid Dynamics *Lucas Polli*

ROOM 2 - MERCOSUL
CHAIR: DR. ERNESTO MANCILLA - UTFPR

09:30 – 09:45	218	**Experimental Analysis Of Particle Dynamics In Erosion Systems: "T" Junction** Fluid Mechanics Multi-phase Flow *Dayanne Martins da Silva*
09:45 – 10:00	102	**Kelvin-Helmholtz and Rayleigh-Taylor instability problems using lattice-Boltzmann models for immiscible fluids** Fluid Mechanics Multi-phase Flow *Maria Rosa Amorim Faria Lisboa*

10:00 – 10:15 103 Determination Of Wave Amplitude In Stratified Dense-Gas/Liquid Flow From Phase-Fraction Distribution Obtained Via Collimated Gamma-Ray Densitometry
Fluid Mechanics
Multi-phase Flow
Cristhian Alvarez Pacheco

CHAIR: PROF. FABIO TOSHIO KANIZAWA - UNICAMP

10:45 – 11:00 147 Calculation of linear growth rates from three-dimensional Navier-Stokes simulations of miscible displacement flows
Fluid Mechanics
Multi-phase Flow
Bruno Jorge Macedo dos Santos

11:00 – 11:15 91 A method based on similitude analysis to predict interfacial waves and film characteristics of annular flows
Fluid Mechanics
Multi-phase Flow
Edson Orati da Silva

11:15 – 11:30 132 Interfacial Wave Classification In A Low-Viscosity Horizontal Core-Annular Flow Via Planar Laser-Induced Fluorescence.
Fluid Mechanics
Multi-phase Flow
Jorge Henrique Arrollo Caballero

11:30 – 11:45 866 Methodology for pressure determination in free-surface viscoplastic fluid flows based on PIV velocity field data
Fluid Mechanics
Instrumentation and Experiments
Guilherme Henrique Fiorot

11:45 – 12:00	558	Experimental setup for vertical particle suspension with viscosified fluid Fluid Mechanics Instrumentation and Experiments *Victor Santana*
12:00 – 12:15	122	Application Of Machine Learning To Parameter Optimization In Spatial Filter Velocimetry For Velocity Field Measurement In Tube Bundle Fluid Mechanics Instrumentation and Experiments *Roberta Fatima Neumeister*

ROOM 3 - AMÉRICAS
CHAIR: DR. ANDRE LEIBSOHN MARTINS - CENPES/PETROBRAS

09:30 – 09:45	619	Matrix acidizing simulations for carbonate plugs: rheological influence for different viscoelastic acid systems, surfactant concentration, and temperature. Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Sérgio Taveira de Camargo Júnior*
09:45 – 10:00	186	Rheological Analysis Of Flow Restart For Water-Based Drilling Fluids: XG, HPMC And HEC Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Julian Andres Jerez Suarez*

10:00 – 10:15	812	**Rheological analysis of e-CSB fluid to simulate sedimented bed** Fluid Mechanics Rheology and Non-Newtonian Fluid Mechanics *Guilherme Mühlstedt*

CHAIR: PROF. SILVIO JUNQUEIRA - UTFPR

10:45 – 11:00	462	**Experimental Analysis of Water-Monoethylene Glycol Mixing in a Horizontal Pipeline** Heat and Mass Transfer Applied Heat and Mass Transfer *Pedro Leineker Ochoski Machado*
11:00 – 11:15	616	**Plate heat exchanger analysis operating with refrigerant R410A** Heat and Mass Transfer Applied Heat and Mass Transfer *Gabriela Pereira Toledo*
11:15 – 11:30	281	**Evaluation Of Pcm Based Thermal Energy Storage System For Future Microgravity Experiments** Heat and Mass Transfer Applied Heat and Mass Transfer *Kelvin Guessi Domiciano*
11:30 – 11:45	142	**Assessment Of Thermal Performance Of Subsea Enclosure Geometries** Heat and Mass Transfer Applied Heat and Mass Transfer *Lucas Militão*

11:45 – 12:00	154	An Overview Of Heat Transfer In Supercritical Co2 Flow Heat and Mass Transfer Applied Heat and Mass Transfer *Victor Gouveia Ferrares*
12:00 – 12:15	236	Experimental analysis of a thermal control system for photovoltaic panels of CubeSats Heat and Mass Transfer Applied Heat and Mass Transfer *Carlos Eduardo Bibow Corrêa*

ROOM 4 - EUROPA
CHAIR: PROF. FABIO TOSHIO KANIZAWA - UNICAMP

09:30 – 09:45	532	Analysis of the Influence of Ocean Roughness on Offshore Wind Potential using Linearized Models Energy and Thermal Systems Biofuels and Renewable Energy *Max Weissheimer*
09:45 – 10:00	545	Thermodynamic evaluation of methanol and dimethyl ether production via biomass gasification in Brazilian distilleries Energy and Thermal Systems Biofuels and Renewable Energy *Mateus Rocha*
10:00 – 10:15	578	Heliostat movement control by image recognition Energy and Thermal Systems Biofuels and Renewable Energy *George John Orbezo Alvarez*

CHAIR: PROF. MOISÉS A. MARCELINO NETO - UTFPR

10:45 – 11:00	622	Wind resource assessment through reanalisys data using the commercial software WAsP Energy and Thermal Systems Biofuels and Renewable Energy *Max Weissheimer*
11:00 – 11:15	663	Overview of Physical and Chemical Characterization Techniques Applied on Biomass Conversion Energy and Thermal Systems Biofuels and Renewable Energy *Luiz Felipe da Silva Ferreira*
11:15 – 11:30	672	Study Of The Impact Of Shading On The Efficiency Of Photovoltaic Panel Energy and Thermal Systems Biofuels and Renewable Energy *Matheus Macedo*
11:30 – 11:45	674	Nitrate Source Optimization for Microalgae Cultivation for Biofuels Production Energy and Thermal Systems Biofuels and Renewable Energy *Murilo Gasparin Rampi*
11:45 – 12:00	718	Prediction of biodiesel properties from microalgae for application in engines Energy and Thermal Systems Biofuels and Renewable Energy Abner Pereira
12:00 – 12:15	735	Microalgae: A Potential Resource For Aviation Biofuel And The Decarbonization Of The Aviation Sector Energy and Thermal Systems Biofuels and Renewable Energy Carla Cristina Loures

ROOM 5 - ÁFRICA
CHAIR: DR. CARLOS EDUARDO R. DALLA - UTFPR

09:30 – 09:45	344	Characterization of boundary layers in solar chimneys from numerical simulations with CFD techniques Heat and Mass Transfer Numerical Heat and Mass Transfer *Daniel Croza*
09:45 – 10:00	353	Symbolic Regression Applied to Regenerative Heat Exchanger Heat and Mass Transfer Numerical Heat and Mass Transfer *Vítor Fernandes Egger*
10:00 – 10:15	552	A constructal theory based numerical study applied to heat sinks Heat and Mass Transfer Numerical Heat and Mass Transfer *Gustavo Pereira*

CHAIR: DR. NEZIA DE ROSSO - UTFPR

10:45 – 11:00	618	Thermal Performance Enhancement in Rectangular Cavities with Phase Change Materials Through Fin Aspect Ratio Design: A Constructal Design Approach Heat and Mass Transfer Numerical Heat and Mass Transfer *Guilherme Ribeiro*
11:00 – 11:15	655	Heat Exchanger Simulation Considering Thermal-Variating Properties Using The Lattice Boltzmann Method Heat and Mass Transfer Numerical Heat and Mass Transfer *Julia Sassa*

11:15 – 11:30	851	Particle Swarm Optimization Applied To The Reduction Of Temperature Stratification In Heat Conduction Problems Heat and Mass Transfer Numerical Heat and Mass Transfer *Andre Flora*
11:30 – 11:45	192	Improving Internal Tumor Treatment Outcomes Through Integrated Ultrasound Acoustic Pressure and Bioheat Transfer Modeling Heat and Mass Transfer Numerical Heat and Mass Transfer *João Bragança*
11:45 – 12:00	810	Construction and characterization of heliostats for concentrated solar energy applications Energy and Thermal Systems Biofuels and Renewable Energy *Lina Maria Varon Cardona*
12:00 – 12:15	857	Numerical Study of Thermal Performance of Vacuum Tube Heat Waters Adapted for Peruvians Coastal Climatic and Geographic Scenario Energy and Thermal Systems Biofuels and Renewable Energy *Elder Mendoza Orbegoso*

ROOM 6 - ÁSIA
CHAIR: DR. THIAGO NEUBAUER - UTFPR

09:30 – 09:45	577	SU2 verification and airfoil profile analysis from the ADAM team Fluid Mechanics Computational Fluid Dynamics *Pietro Batistussi Franca*

09:45 – 10:00	587	Comparative Analysis of Backward and Forward Swept Blades for Hydrokinetic Turbines: A Numerical Study Fluid Mechanics Computational Fluid Dynamics *Thiago Vieira de Souza*
10:00 – 10:15	199	Numerical Analysis Of Wind-Induced Loads In Solar Tracker Systems Fluid Mechanics Computational Fluid Dynamics *Gabriel Gonçalves*

CHAIR: PROF. CÉZAR NEGRÃO - UTFPR

10:45 – 11:00	46	Study Of The Mixing Process In A Rotating Detonation Engine With A Non-Reactive Flow Of Hydrogen Air In A Non-Premixed Configuration Combustion Engine Combustion *Thomas Willians Leite*
11:00 – 11:15	52	Study of the effects of oxygen-enriched air on biogas combustion for application in internal combustion engines Combustion Engine Combustion *Waldyr Gallo*
11:15 – 11:30	90	Evaluation and inventory of emissions from a bi-fuel turbo-charged engine operating with mixtures of CNG with H2g and biomethane with H2g using a phenomenological model Combustion Engine Combustion *Jullyane Raquel Almeida Nunes*

11:30 – 11:45	92	**The Ethanol Solution for Power Generators in Brazil: contributions to decision-making to replace diesel added with biodiesel.** Combustion Engine Combustion *Marcio Roberto Labigalini*
11:45 – 12:00	169	**Numerical study of combustion, NOx emissions and efficiency in a Spark-Assisted Compression Ignition (SACI) natural gas engine** Combustion Engine Combustion *Rayanne Nascimento*
12:00 – 12:15	684	**Green Hydrogen In Compression Ignition Engines To Reduce Emissions In Southeast Brazil: A Case Of Study** Combustion Engine Combustion *Paulo Henrique Santos*

ROOM 7 - OCEANIA
CHAIR: PROF. RIGOBERTO E. M. MORALES - UTFPR

09:30 – 09:45	73	**The effect of hydrogen addition to Uruguayan natural gas on combustion behavior and interchangeability** Combustion Chemical Kinetics and Modeling *Facundo Rivoir Engelhardt*
09:45 – 10:00	182	**Computational modeling of a system for the application of pure ammonia in internal combustion engines of the Otto cycle.** Combustion Chemical Kinetics and Modeling *Bruno Lourenço de Souza*

10:00 – 10:15 608 **Analyzing Flame Surface Dynamics in Laminar Premixed Bunsen Flames with Inflow Modulations**
Combustion
Chemical Kinetics and Modeling
Amir Antonio Martins Oliveira

CHAIR: DR. PATRICIA VIERA DE OLIVERA - UTFPR

10:45 – 11:00 438 **A Two-Dimensional Modeling Of A Permeable Fluid-Porous Interface In Comsol Multiphysics**
Combustion
Combustion, Pyrolisis and Gasification of Solids and Liquids
Ruan Schultz Riguetti

11:00 – 11:15 414 **Stability Study Of Confined Inverse Diffusion Flames At High Pressures**
Combustion
Combustion, Pyrolisis and Gasification of Solids and Liquids
Lucas Güenter Fernandes

11:15 – 11:30 437 **Heat Penetration Affected By Ignition Conditions Of A Charcoal Bed**
Combustion
Combustion, Pyrolisis and Gasification of Solids and Liquids
André Veríssimo Xavier

11:30 – 11:45 494 **A Preliminary Computacional Study Of Urban Solid Waste And Sugarcane Bagasse Influidized Bed Reactors**
Combustion
Combustion, Pyrolisis and Gasification of Solids and Liquids
Michel Silva Bonifácio

11:45 – 12:00 441 **Multiphase Modeling of Solid Propellant Detonation in Moving Projectiles**
Combustion
Combustion, Pyrolisis and Gasification of Solids and Liquids
Raphael Espíndola

12:00 – 12:15 789 **Three Dimensional CFD Study Of Reciprocating Grate Biomass Boiler**
Combustion
Combustion, Pyrolisis and Gasification of Solids and Liquids
Pedro Lucas Zamataro da Silva

ROOM 8 - MEETING ROOM I
CHAIR: PROF. MOISÉS A. MARCELINO NETO - UTFPR

09:30 – 09:45 227 **Numerical Validation Of A Concept Vehicle Simultaneously Fueled With Liquid And Gaseous Biofuels**
Combustion
Engine Combustion
Guilherme Sávio Souza

09:45 – 10:00 389 **Optimizing Efficiency and eliminating NOx Emissions of Hydrogen Port Fuel Injection Engines Through Lean Operation and Supercharging**
Combustion
Engine Combustion
Mario Martins

10:00 – 10:15 457 **Study of Injection Start Injection Angle to Improve Efficiency in High and Ultra-High Pressure Gasoline Direct Injection**
Combustion
Engine Combustion
Igor Rodrigues dos Santos

10:45 – 11:00	197	Optimal Design of Brazilian Solar, Wind and Battery Hybrid Power Plants Decarbonisation Renewable energies *Thiago Amaral*

CHAIR: PROF. ARTHUR VIEIRA DA SILVA OLIVEIRA - USP

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11:15 – 11:30	430	Vacuum Enhanced Air Gap Membrane Distillation Pilot Plant With Solar Heat Use And Recovery Decarbonisation Renewable energies *Ingrid Curcino*
11:30 – 11:45	696	Analysis of thermal comfort in a standard house integrating phase change materials in Mexico Decarbonisation Renewable energies *Robert Jäckel*
11:45 – 12:00	806	Comparative Assessment of Thermal Storage Technologies in Solar Disk Collectors: Conventional versus Phase Change Materials Decarbonisation Renewable energies *Robert Jäckel*

12:00 – 12:15 881 **Determination Of Parameters In Photovoltaic Silicon Modules And New Polynomial Function For The Calculation Of The Maximum Power Point**
Decarbonisation
Renewable energies
Darío Gerardo Fantini

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Conferece organization
UTFPR – Federal University of Technology - Paraná
ABCM – Associação Brasileira de Engenharia e Ciências Mecânicas

Design and layout
Mayara Hikari Dias Nakai

	Sunday Nov 10th	Monday Nov 11th	Tuesday Nov 12th	Wednesday Nov 13th	Thursday Nov 14th	
08:30		Keynote Lecture 2	Keynote Lecture 4	Keynote Lecture 6	Keynote Lecture 7	**08:30**
09:30		Technical sessions	Technical sessions	Technical sessions	Technical sessions	**09:30**
10:15		Coffee break	Coffee break	Coffee break	Coffee break	**10:15**
10:40		Technical sessions	Technical sessions	Technical sessions	Technical sessions	**10:40**
12:15		Lunch	Lunch	Lunch	Closing Ceremony	**12:15**
14:00		Keynote Lecture 3	Keynote Lecture 5	Visit: Iguazu Falls or Itaipu		**14:00**
15:00	Registration	Technical sessions	Technical sessions			**15:00**
16:30		Coffee break + Poster Session	Coffee break + Poster Session			**16:30**
18:00	Opening Ceremony	ABCM Committee	ABCM Plenary			**18:00**
18:45	Keynote Lecture 1					**18:45**
19:45	Cocktail Reception			Conference Dinner		**19:45**