25 a 28 de agosto de 2019 • Hotel Windsor Marapendi • Barra da Tijuca • Rio de Janeiro - RJ

FULL SCHEDULE AND PROGRAM

ACTIVICTY	VENUE	20/08	21/08	22/08	23/08	24/08	25/08	26/08	27/08	28/08	29/08	30/08
COURSE – Principles of Biological Transmission Electron Microscopy: theory and practice	CENABIO/UFRJ	PRE-										
COURSE – Practical Scanning Electron Microscopy: Ultra Low kV Applications	CBPF											
COURSE – Advanced Transmission Electron Microscopy: Corrected-STEM and Monochromated EELS	INMETRO											
COURSE – Focused Ion Beam Applications: From Gallium to Helium	INMETRO											
COURSE – Introduction to 2D and 3D Image Processing	PUC/RJ											
COURSE – Introduction to Atomic Force Microscopy	PUC/RJ											
SHORT COURSE I – Crystallography and Electron Diffraction	WINDSOR MARAPENDI						CONGRESS					
SHORT COURSE II – Why EELS?	WINDSOR MARAPENDI											
SHORT COURSE III – Preparation and Analysis of Biological Samples in Electron Microscopy	WINDSOR MARAPENDI											
CONGRESS / EXHIBITION	WINDSOR MARAPENDI											
COURSE – Structure and Material Properties Correlation Using AFM	CT/UFRJ										POST-	

	SUNDAY (25/08)		
13h00 – 19h00	**REGISTRATION**		
15h00 – 17h00	**(Room Hooke, Binning, Bragg)**	**SHORT COURSES 1, 2, 3**	
17h00 – 18h30	**OPENING PLENARY** **Sirius: The New Brazilian Synchrotron Light Source** **Harry Westfahl Jr. (LNLS - CNPEM, Brazil)**		
18h30 – 19h30	**(Foyer)**	**COCKTAIL RECEPTION AND EXHIBITION**	

	MONDAY (26/08)			
09h00 – 10h00	**(Room Ruska)**	**PLENARY TALK I** **Cryo Soft X-ray Nanotomography for Chemical Elements Detection in Biological Samples** **José Javier Conesa (ALBA Synchrotron Light Source, Spain)** Chair: Wanderley de Souza (CENABIO, UFRJ)		
10h00 – 10h20	**COFFEE BREAK / EXHIBITION**			
	(Room Hooke)	**(Room Bragg)**	**(Room Ruska)**	
	SIMPOSIUM MATERIALS I **Transmission Electron Microscopy and Spectroscopy of Nanostructures and Engineering Materials** **(Chair: Bráulio Archanjo)**	**SIMPOSIUM MATERIALS II** **Correlative and Optical Microscopy Applications** **(Chair: Nelcy Mohallem)**	**CONFERENCE BIOLOGY I** **(Chair: Edilene Oliveira)**	
10h20 – 10h40	Recent Technologies in Electron Microscopy for Modern Materials Characterization *Rafael Villaurrutia (Thermofisher Scientific)*	Structure and Optical Properties of ZnO Nanoparticles Doped With Transition Metals by Cathodoluminescence *Ney Mattoso (UFPR)*	Nanochemical Anatomy of the Osmoregulatory System in Protozoan Parasites *Kildare Miranda (CENABIO, UFRJ)* Aplicação da Nanobiotechnologia e Microscopia no Estudo de Câncer *Sônia Baó (UNB)*	
10h40 – 11h00	Morphological Study of 1D Sodium Niobate Nanostructures - *Beatriz Canabaro (UFRJ)*			
11h00 – 11h20	Mn5Si3 Nanowire Composition and Crystalline Structure Resolved By TEM *Alexsandro da Cruz (Unicamp)*	Discrimination of Quartz and Resin Using Convolutional Neural Networks in Optical Microscopy Images of Minerals - *Richard Santos(PUC-Rio)*		
11h20 – 11h40	Effect of Size on Phase Segregation of Heusler Alloy Nanoparticles Synthesized by Pulsed Laser Deposition *Noemi Checca (CBPF)*	Development of an Image Analysis System for Automatic Characterization of Sintering Cold Agglomerated *Karen Soares Augusto (PUC-Rio)*		
11h40 – 12h00	Synthesis and Characterization of NiFe2O4 Nanoparticle for Removal of Dyes in Aqueous Solution *Rafael de Souza (UFRJ)*	Application of Automated Mineralogical Mapping for Advanced Characterization of Pre-Salt Reservoir Rocks *Yaro Parizek (Petrobras – CENPES)*		
12h00 – 13h30	**LUNCH**			
13h30 – 14h30	**(Romm Ruska)**	**PLENARY TALK II** **New Developments in EELS at High Energy Resolution: Exploring the Impact of Direct Electron Detectors, Machine Learning on Functional Materials Research** **Gianluigi Botton (Mc Master University, Canada)** Chair: Daniel Lorscheitter Baptista (UFRGS)		
	(Room Hooke)	**(Room Bragg)**	**(Room Binning)**	**(Room Ruska)**
	SIMPOSIUM MATERIALS III **Scanning Electron Microscopy, Microanalysis and 3D Techniques** **(Chair: Wagner Rodrigues)**	**SIMPOSIUM MATERIALS IV** **Analysis and Modification of Materials with Electron and Ion Beams** **(Chair: Paulo Fichtner)**	**SIMPOSIUM BIOLOGY I** **Scanning Microscopy Using Electrons and Ions** **(Chair: Marcia Attias)**	**SIMPOSIUM BIOLOGY II** **Dynamic Cell and Molecular Biology** **(Chair: Manoel Biancardi e Hernandes Carvalho)**
14h40 – 15h00	Comparing Quantitative EDS and WDS Using Microanalytical Standards and Interlaboratorial Test Samples - *Karla Balzuweit (UFMG)*	The Effect of Flux on the Irradiation-induced Precipitation in AISI-316L: an in situ TEM study *Ítalo M. Oyarzabal (UFRGS)*	Analytical SEM *Jim Kilcrease (Hitahi)*	Microscopia Vibracional Coerente e Espontânea e Microscopia de Super Resolução *Carlos Lenz (UFC)*
15h00 – 15h20		Defects Pattern on Monolayer Graphene with High Spatial Frequency Using Helium Ion Microscopy *William Silva (INMETRO)*	Biomimetic Calcium Phosphate Films Synthesized by Pulsed Laser Deposition for Biomedical Applications *Noemi Checca (CBPF)*	
15h20 – 15h40	Fabrication of Lignocellulose-Based Microreactors: Copper-Functionalized Bamboo for Continuous-Flow CuAAC Click Reactions - *Omar Pandoli (PUC-Rio)*	STEM-EDX Analysis of Ion Irradiation-Induced Precipitation In Solution Annealed AISI 316L Alloys *Mariana de Mello Timm (UFRGS)*	Automated Machine Learning Pipeline Predicts Cryptococcus spp. Capsular Morphotypes in Scanning Electron Microscopy Images *William Lopes (UFRGS)*	Biogenic Magnetic Nanoparticles, a Novel Tool to Treat Synaptic Deficit Diseases and Glioblastoma *Gabriele Vargas Cesar (UFRJ)*
15h40 – 16h00	Hematite And Pyrite From Elba Island: From Theory To SEM/EDS Microanalysis - *Corinne Arrouvel (UFSCar)*	Stability of Ag and Au Nano-objects Under Electron Irradiation *Bárbara Konrad (UFRGS)*	Structural Characterization of Poly (ε-caprolactone) Nanocapsules through Advanced Techniques of Scanning Electron Microscopy - *Thaniele Müller (UFRGS)*	The Use Of The Myenteric Neurons Of The Fish As Environmental Impact Biomarker *Alexandre Gonçalves (UNESP)*
16h00 – 16h20	Characterization of Reduced Graphene Oxide Thin Films Covered by Cu Sputtering by Raman Spectroscopy, SEM and EDS - *Andreza Lima (IME)*	Synthesis of Silicon Nanostructures in a Quasi-Order Pattern Induced by Ion-Beam *Camilla Codeco (UFRJ)*	Origin Of Multivesicular Bodies In Giardia intestinalis And Its Behavior During The Parasite Life Cycle *Victor Midlej (UFRJ)*	Environmental Enrichment Promotes Protection Against the Dissemination of Cocal Virus in the C57BL/6 Mice Central Nervous System - *José Antonio Diniz Jr. (IEC)*
16h20 – 18h00	**POSTER SECTION I (BIO 001 – BIO 045 / MAT 001 – MAT 051)** **&** **COFFEE BREAK**			
17h30	**(Room Bragg)**	**MULTIUSER LAB/CENTERS MEETING**		

TUESDAY (27/08)

09h00 – 10h00	**(Room Ruska)** **PLENARY TALK III** **Correlative STEM and SEM Imaging of Nanostructured Materials in a Scanning Electron Microscope** **Dagmar Gerthsen (Karlsruhe Institute of Technology, Germany)** Chair: Jefferson Bettini (LNNano/CNPEM)			
10h00 – 10h20	**COFFEE BREAK / EXHIBITION**			
	(Room Hooke)	**(Room Bragg)**	**(Room Ruska)**	**(Room Binning)**
	SIMPOSIUM MATERIALS V **Transmission Electron Microscopy and Spectroscopy of Nanostructures and Engineering Materials** **(Chair: Paula Jardim)**	**SIMPOSIUM MATERIALS VI** **Scanning Probe Microscopy (SPM) Applications** **(Chair: Renata Antoun Simao)**	**SIMPOSIUM BIOLOGY III** **TEM and STEM Imaging of Biological Samples** **(Chair: Eduardo Torres)**	**SIMPOSIUM BIOLOGY IV** **Analytical Electron Microscopy in Biology** **(Chair: Jacques Werckmann)**
10h20 – 10h40	Electron and Ion Microscopes as Tools for Materials Science, Nanoscience and Nanometrology *Bráulio Archanjo (INMETRO)*	Beyond Imaging *Renata Antoun Simao (UFRJ)*	Contributions of Transmission Electron Microscopy to the Understanding of Endocrine Deregulation in the Accessory Glands of the Genital System *Sebastiao R. Taboga (UNESP)*	The Limpet Tooth Revisited: matrix structure, minerals distribution and composition *Marcos Farina (UFRJ)*
10h40 – 11h00	Spherical Aberration-Corrected Transmission Electron Microscopy for Materials Characterization at the Brazilian Nanotechnology National Laboratory *Carlos Alberto Ramirez (LNNano/CNPEM)*			
11h00 – 11h20	Studying the Effects of Al-Doping Fe-(Hydr)Oxides on Contaminant Sorption - *Erico Freitas (UFMG)*	Plasmon-Tunable Tip Pyramid Probes for TERS *Thiago L. Vasconcelos (INMETRO)*	Histopathological and Ultrastructural Aspects of Cardiac Involvement in Dengue: Contributions of the Murine Model - *Gabriela Cardoso Caldas (Fiocruz)*	UV-Irradiation of Oocytes for the Induction of Androgenetic Fishes *Matheus Pereira (UNESP)*
11h20 – 11h40	Fe/O Ratio Determination by EDS and EELS: Effect of Experimental Parameters *Douglas Soares da Silva (UNICAMP)*	Nanoscale Characterization of Minerals and Organic Matter in Hydrocarbon Source Rocks *Douglas Lacerda (PUC-Rio)*	Combined Microscopy and Spectroscopy Techniques to Characterize a Fossilized Feather with Minimal Damage to the Specimen - *Rodrigo de Carvalho (Jardim Bot., RJ)*	Measuring Electron Beam Damage in Proteins Using Electron Energy Loss Spectroscopy *Marcelo de Farias (LNNano)*
11h40 – 12h00	Analytical Electron Microscopy study of Hydrogen Reduction Synthesis of Nanoparticles of the Ternary CuNiCo Alloy System - *Eliana Marin (PUC-Rio)*	Characterization of Polymorph by AFM: Surface Properties and it Impact on Dissolution *Beatriz Patricio (Farmanguinhos/Fiocruz)*	Time-Dependent Evaluation of Ultrastructural and Morphological Alterations Induced by 4-(5'-formyl-[2,2'-bithiophen]-5-yl)but-3-yn-1-yl acetate on Promastigote Forms of Leishmania amazonensis *Rayanne Machado (UEM)*	Iron and Manganese Minerals Associated to Microalgae and Prokaryotes of the Periphyton of Doce River and Tributaries Affected by Iron Mining Tailings from Collapsed - *Carolina Keim (UFRJ)*
12h00 – 13h30	**LUNCH**			
13h30 – 14h30	**(Room Ruska)** **PLENARY TALK IV** **Atomic Structures of Biological Macro-molecules by Single-Particle Cryo-EM** **Marin Van Heel (LNNano, Brazil/Leiden Univ., Netherlands/Imperial College London, UK)** Chair: Rodrigo Portugal (LNNANO-CNPEM)			
	(Room Hooke)	**(Room Bragg)**	**(Room Binning)**	**(Room Ruska)**
	SIMPOSIUM MATERIALS VII **Scanning Electron Microscopy, Microanalysis and 3D Techniques** **(Chair: Karla Balzuweit)**	**SIMPOSIUM MATERIALS VIII** **Electron Diffraction Mapping in Materials Characterization in SEM and TEM** **(Chair: Guilherme Zepon)**	**SIMPOSIUM BIOLOGY V** **Miscellaneous** **(Chair: Marcos Farina)**	**SIMPOSIUM BIOLOGY VI** **Cryo-electron Microscopy and Structural Biology** **(Chair: Gregory Kitten e Rodrigo Portugal)**
14h40 – 15h00	Advanced Image Segmentation by Machine Learning *Sidnei Paciornik (PUC-Rio)*	Advanced Nanoscale Orientation and Atomic Characterization of Phases in Beta Ti Alloys *Conrado Ramos Moreira Afonso (UFSCar)*	Microscopia de Pinças Óticas e Aplicações em Biologia *Bruno Pontes (UFRJ)*	Cryo-EM at LNNano: overview on research and infrastructures - *Rodrigo Portugal (LNNano/CNPEM)*
15h00 – 15h20		Effect of Grain Boundary Character Distribution on δ-phase Precipitation in the Nickel-based Superalloy 718 *Flavia Gallo (UFRJ)*		
15h20 – 15h40	Deep Learning Segmentation of Strain-Hardening Cement-Based Composites (SHCC) microCT Images *Renata Lorenzoni (PUC-Rio)*	Retained Austenite Volume Fraction in 52100 Steel Determined by EBSD and Others Correlative Techniques *Geronimo Perez (INMETRO)*	Morphological Changes in the Intestine of Pufferfish Due to Anthropogenic Pollution: a New Proposal for Environmental Quality Assessment *Gabriela Marinsek (UNESP)*	Studying Glycosylation Sites of Annelid Hemoglobin by Cryo-EM - *Juliana Mello (LNNano/CNPEM)*
15h40 – 16h00	Correlative In Situ Analysis on Nanoscale Using AFM in SEM - *Ernesto R. Souza (Quantum Design International)*	Combining EBSD and CL in a Geological Problem *Paola Barbosa (UnB)*	Measurements of the Dielectric Constant of a Natural Photonic Crystal by Electric Force Microscopy *Wescley Valeriano (UFMG)*	Cryo-TEM Study of the Growth and Crystallization Processes of Calcium Phosphate *André Rossi (CBPF)*
16h00 – 16h20	Structural and Morphological Characterization of BaTiO3/CoFeO4 Thin Films Using Scanning and Transmission Electron Microscopies and Atomic Force Microscopy - *Nelcy Mohallem (UFMG)*	Study of the growth of spicules of calcareous sponges by Transmission Electron Microscopy and Transmission Kikuchi diffraction *Jacques Werckmann (CBPF)*	Use of Tricology Associated with Electronic Microscopy in the Conservation of Genetic Resources in Sheep in Northeast of Brazil - *Luis Rufino (UFC)*	Adaptation of Cryogenic System to a Cross Beam Scanning Electron Microscope *Vânia Vieira (UFRJ)*
16h20 – 18h00	**(Foyer)** **POSTER SECTION II (BIO 046 – BIO 101 / MAT 052 – MAT 099)** **&** **COFFEE BREAK**			
17h30	**(Room Hooke)** **SBMM GENERAL ASSEMBLY**			
18h30	**CONFRATERNIZATION** **Garden Brasa Barra – Av. Lúcio Costa, 6000**			

WEDNESDAY (28/08)

09h00 – 10h00 — (Room Ruska)

PLENARY TALK V
Dynamic TEM Developments for Improved Understanding of Reactions and Processes in 2D Materials
Angus Kirkland (University of Oxford, UK)
Chair: Guillermo Solorzano (PUC-Rio)

10h00 – 10h20 — **COFFEE BREAK**

	(Room Hooke)	(Room Bragg)	(Room Binning)	(Room Ruska)
	SIMPOSIUM MATERIALS IX **Transmission Electron Microscopy and Spectroscopy of Nanostructures and Engineering Materials** **(Chair: Luiz Henrique de Almeida)**	**SIMPOSIUM MATERIALS X** **Scanning Probe Microscopy (SPM) Applications** **(Chair: Rodrigo Prioli)**	**SIMPOSIUM MATERIALS VII** **Miscellaneous** **(Chair: Marcos Farina)**	**SIMPOSIUM MATERIALS VIII** **Sample Preparation** **(Chair: Marlene Benchmol)**
10h20 – 10h40 10h40 – 11h00	In-situ Electron Microscopy Observation of the Redox Process in Plasmonic Heterogeneous-Photo-Sensitive Nanoparticles *Jefferson Bettini (LNNano/CNPEM)*	Tribomechanical Properties of Single Layer and Multilayer Graphene *Rodrigo Prioli (PUC-Rio)*	New developments in Atomic Force Microscopy: Diagnosis, Biosensors and Fast Scan Modes *Gilberto Weissmuller (UFRJ)*	i. Modelos de Cultivo em 3D: Uma Ferramenta para os Estudos de Interação Celular - *Carlos Santos (UFRJ)* ii. Homemade Adaptations on the Processing of Tissue and Small helminthes - *Eduardo Torres (UERJ)* iii. Tomografia Eletrônica: uma perspectiva diferente na análise de resultados - *Victor Midlej (UFRJ e FIOCRUZ)*
11h00 – 11h20	TEM Topics: HRTEM Applications *Rafael Leal (JEOL)*	Scanning Microwave Impedance Microscopy of 2D Layered Materials *Gilberto Medeiros (UFMG)*	Invasion of Bacteria in Intestinal Tissue Infected with Trichuris muris *Dayane Alvarinho de Oliveira (UERJ)*	iv. Devices Produced by 3D Printing for Electron Microscopy Sample Preparation - *Lia Coelho (CBPF)* v. Scanning Electron Microscopy and Helium Ion Microscopy of the Inner Structure of Trypanosoma cruzi Infected Cells Fixed and Fractured by the OSMIUM-DMSO-OSMIUM Method - *Otavio Pacheco (UFRJ)* vi. Cryoelectron Microscopy Imaging of whole cells: Preliminary results on freezing protocols applied to Protozoan Parasites - *Adélia Lima (UFRJ)* vii. Structural Organization of Oscarella (Porifera, Homoscleromorpha) Frozen and Fractured in Absolute Ethanol Observed by High Resolution Scanning Electron Microscopy - Daniele Stillitani (UFRJ) viii. Chemical Modification of Holey Carbon Support Film For Cryogenic Electron Microscopy Using 2-mercaptoethanol - Otávio Berenguel (LNNano/CNPEM)
11h20 – 11h40	In-Situ TEM of Calcium Carbonate Mineralization in The Presence of L-Aspartic *Mariana Longuinho (CBPF)*	Substrate Influencing Friction of 2D Materials *Thiago Gonzalez-Llana Brito (UFRJ)*	Behavior of Osteoblasts onto Topographically Designed Scaffolds in vitro *Rafaela S. dos Santos (UFRJ)*	
11h40 – 12h00	Structural Investigation of Hydrothermally Synthesized Iron Oxide Quantum dots *Naga Vishnu (LNNano/CNPEM)*	The Sliding of Single Asperities in Graphene *Felipe Ptak Lemos (PUC-Rio)*	Lack of Two Independent Physiological Regulators Impacts the Ultraesctructure of *Cryptococcus gatti* *Beatriz Santana Borges (Fiocruz-PR)*	

12h00 – 13h30 — **LUNCH**

13h30 – 14h30 — (Room Ruska)

PLENARY TALK VI
Characterizing the Structure and Functionality of Organic Matrices of Mineralised Tissues Using Cryo-Electron Microscopy
Fabio Nudelman (University of Edinburgh, UK)
Chair: Marcos Farina (IBCCF, UFRJ)

	(Room Hooke)	(Room Bragg)	(Room Ruska)
	SIMPOSIUM MATERIALS XI **Scanning Electron Microscopy, Microanalysis and 3D Techniques** **(Chair: Thiago Vasconcelos)**	**SIMPOSIUM MATERIALS XII** **Transmission Electron Microscopy and Spectroscopy of Nanostructures and Engineering Materials** **(Chair: Conrado Afonso)**	**CONFERENCE BIOLOGY II** **(Chair: André Rossi e Marco Guimarães)**
14h40 – 15h00	Morphology Effect on the Capacitive Properties of Manganese Oxide Nanostructures Prepared by Pulsed Laser Deposition - *Yutao Xing (UFF)*	Microstructural Investigation of the Magnetic Behaviour of a Heat-Resistant Cast Austenitic Stainless Steel Jean Dille (Univ. Libre de Bruxelles/UFRJ)	Origin of the Nervous System Herch Moysés Nussenzveig (UFRJ)
15h00 – 15h20	Characterization of Ceramic Materials Coated with Nanostructured Diamond by Microscopy Techniques *Rodrigo Pinto (INMETRO)*		
15h20 – 15h40	Characterization of Nanosized Hydroxyapatite and Hydrogel Composite for Biomaterials Applications Luiza Braga Ferreira dos Santos (IME)	Spray-forming of Al-matrix Composite Reinforced with Quasicrystals *Guilherme Zepon (UFSCar)*	Infabic: towards a subcellular and dynamic cell biology Hernandes Carvalho (UNICAMP)
15h40 – 16h00	Ultra-High Conductive Hollow Channels Guided By Bamboo Bio-Template For Electric And Electrochemical Devices - *Omar Pandoli (PUC-Rio)*	Study Of Y Addition Effect on Microstructure Of Nickel-based Alloy 718 Rosa Silveira (UFRJ)	
16h00 – 16h20	Morphological Characterization of Corrosion Products of Guyed Transmission Towers Anchor Rods *Bruna Dias (Lactec - Estruturas Civis)*	Diffraction Contrast and Analytical Electron Microscopy of Multi-Phases GB Precipitation Phenomena in a Cr-Fe-Ni Alloy - *Julio Spadotto (PUC-Rio)*	

16h20 – 16h30 — **CLOSING**