



**WIRMS**  
2019



10<sup>th</sup> International Workshop on Infrared  
Microscopy and Spectroscopy with  
Accelerator Based Sources  
23-27 September 2019  
Campinas & Ubatuba | Brazil

# CONFERENCE PROGRAM

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## DAY 1 | Monday, September 23<sup>rd</sup>

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08:45	<b>UVX facility tour</b>
09:30	Registration at Sirius
10:30	<b>Opening Talk</b> <i>Yves Petroff, LNLS, Brazil</i>
10:50	<b>Sirius facility tour</b>
11:50	Brunch
12:50	Departure to Ubatuba + Lunch box

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## DAY 2 | Tuesday, September 24<sup>th</sup>

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08:45	<b>Welcome</b>   <i>Raul Freitas, Brazilian Synchrotron Light Laboratory, Brazil</i>
09:00	<b>Sirius, the new Brazilian Synchrotron Light Laboratory</b>   <i>Harry Westfahl, LNLS, Brazil</i> <b>Nanoscale resolved synchrotron IR analysis</b> <i>Session Chair: Raul Freitas</i>
09:30	<b>Expanding the Frontiers of Synchrotron Infrared Nanospectroscopy</b>   <i>Hans Bechtel, Advanced Light Source, USA</i>
10:05	<b>Photothermal Infrared Nanospectroscopy with Synchrotron Radiation at Diamond Light Source</b>   <i>Mark Frogley, Diamond Light Source, UK</i>
10:25	<b>Amplitude Tuning and Propagation Modulation of Hyperbolic Plasmon Phonon Polaritons in Graphene-hBN Heterostructures</b>   <i>Francisco Maia, Brazilian Synchrotron Light Laboratory, Brazil</i>
10:45	Coffee Break <b>IR spectro-microscopy and imaging</b> <i>Session Chair: Lisa Vacari</i>
11:05	<b>Real-Time Synchrotron-based FTIR Spectromicroscopy of Molecular Signaling During Electrotaxis Initiation</b>   <i>Hoi-Ying Holman, Lawrence Berkeley National Laboratory, USA</i>

11:40	<b>Monitoring the kinetic of cellular uptake of molecules tagged with an infrared active probe in single living cells. A feasibility study</b>   <i>Christoph Sandt, Synchrotron SOLEIL, France</i>
12:00	<b>Four-Angle Polarisation-Resolved Transmission FTIR Mapping for Materials Orientation Analysis</b>   <i>Jitraporn (Pimm) Vongsvivut, Australian Synchrotron, Australia</i>
12:20	<b>Transfection Interference Influence On Spectral Quality And Histopathologic Classification Of Infrared Imaging Data</b>   <i>Tomasz Wrobel, Polish Academy of Sciences, Poland</i>
12:40	Lunch
	<b>FEL and ERL IR/THz sources and beamlines</b> <i>Session Chair: Paul Dumas</i>
14:00	<b>Exploring THz-driven dynamics on sub-cycle timescales at the TELBE facility</b>   <i>Jan-Christoph Deinert, Helmholtz-Zentrum Dresden-Rossendorf, Germany</i>
14:35	<b>Near-field nanoscopy with infrared-to-THz accelerator-based photon sources</b>   <i>Lukas Wehmeier, Technische Universität Dresden, Germany</i>
15:10	<b>Material science using THz-FEL</b>   <i>Akinori Irizawa, Osaka University, Japan</i>
15:30	Coffee Break
15:50	<b>The TeraFERMI beamline as a powerful tool for nonlinear studies on Dirac materials</b>   <i>Andrea Perucchi, Elettra Synchrotron, Italy</i>
16:30-18	<b>Posters Session</b>
19:00	Regular dinner

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## DAY 3 | Wednesday, September 25<sup>th</sup>

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08:45	<b>Announcements</b>
	<b>Nanoscale resolved synchrotron IR analysis</b> <i>Session Chair: Alex McLeod</i>
09:00	<b>Novel Concepts in Infrared Nano-Imaging – Competing, Confusing, Controversial, or Complementary?</b> <i>  Markus Raschke, University of Colorado, USA</i>
09:35	<b>Computational scattering-type near-field optical microscopy</b>   <i>Bernd Kaestner, Physikalisch-Technische Bundesanstalt, Germany</i>
09:55	<b>Optical Nano-imaging of Dirac Plasmons at the Graphene-Talc heterostructure</b>   <i>Ingrid Barcelos, Brazilian Synchrotron Light Laboratory, Brazil</i>
10:15	<b>Probing the nanoscale chemical composition of organic-inorganic hybrid perovskite films through synchrotron infrared nanospectroscopy</b>   <i>Marcio Soares, Brazilian Synchrotron Light Laboratory, Brazil</i>
10:35	Coffee Break
10:55	<b>Nanoscale Analytics on Organic Materials using nano-FTIR</b>   <i>Adrian Cernescu (Neaspec)</i>
	<b>IR spectro-microscopy and imaging</b> <i>Session Chair: Tim May</i>
11:15	<b>Synchrotron-based Single-Shot Infrared Spectroscopy at BESSY II</b>   <i>Eglof Ritter, Humboldt Universität zu Berlin, Germany</i>
11:50	<b>Synchrotron Macro ATR-FTIR Microspectroscopy for High-Resolution Chemical Mapping of Single Cells</b>   <i>Jitraporn (Pimm) Vongsvivut, Australian Synchrotron, Australia</i>
12:10	<b>A Multimillion Years Old Reptile Keeps Its Feet Warm</b>   <i>Per Uvdal, Lund University, Sweden</i>
12:30	Lunch

## IR sources, detectors and facility developments

*Session Chair: Mark Frogley*

- 14:00 **Infrared Synchrotron Radiation with 2020 Vision** | Lawrence Carr, Brookhaven National Laboratory, USA
- 14:35 **SESAME IR Beamline : the First in the Middle East and Neighbouring Regions** | Gihan Kamel, SESAME Synchrotron, Jordan
- 14:55 **Accelerator Based Infrared Sources and Detector Saturation** | Yuka Ikemoto, SPring-8, Japan
- 15:15 **Progress of Mid and Far IR Beamlines at Canadian Light Source** | Tim May, Canadian Light Source, Canada
- 15:35 Coffee Break
- 15:55 **Terahertz coherent synchrotron radiation: recent results on high repetition-rate measurements and stability control at SOLEIL** | Christophe Szwaj, Synchrotron SOLEIL, France
- 16:30 **SRIR Unlimited** | Ferenc Borondics, Synchrotron SOLEIL, France
- 16:55 **MID-IR generation based on difference frequency generation (DFG) and femtosecond fiber laser systems** | Carsten Cleff, Menlo Systems GmbH, Germany
- 19:00 **Conference Dinner**

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## DAY 4 | Thursday, September 26<sup>th</sup>

- 08:45 **Announcements**
- Nanoscale resolved synchrotron IR analysis**  
*Session Chair: Francisco Maia*
- 09:00 **IR near-field nanoscopy and nanospectroscopy** | Rainer Hillenbrand, CIC nanoGUNE, Spain
- 09:35 **Recent Innovations in Nanoscale IR Spectroscopy: A Tunable Broadband IR Laser Source for Near-Field Imaging and Spectroscopy** | Miriam Unger, Bruker Nano Surfaces Division, Germany
- 09:55 **Real time in situ monitoring of drug release from metal organic framework nanocomposites via synchrotron microspectroscopy** | Barbara Souza, Diamond Light Source, UK

10:15	<b>IR and THz near-field nano-imaging and nano-spectroscopy of correlated electron materials</b>   <i>Mengkun Liu, Stony Brook University, USA</i>
10:50	Coffee Break
11:10	<b>State of the Art in Cryogenic Infrared Nano-imaging</b>   <i>Alex McLeod, Columbia University, USA</i>
11:45	<b>Controlling Electronic Phase Separation on the Nanoscale</b>   <i>Stephanie Corder, Advanced Light Source, USA</i>
11:50	<b>Extracting the electronic properties of an oxide two-dimensional electron gas by scanning near-field optical microscopy and phonon modeling</b>   <i>Julian Barnett, RWTH Aachen, Germany</i>
12:25	Lunch
	<b>Special IR Techniques</b> <i>Session Chair: Ferenc Borondics</i>
14:00	<b>Infrared study of the 2H-MoTe<sub>2</sub> electronic structure under pressure</b>   <i>Francesco Capitani, Synchrotron SOLEIL, France</i>
14:20	<b>Optically Super-resolved InfraRed Imaging micro-Spectroscopy</b>   <i>Tyler Huffman, US Naval Research Laboratory, USA</i>
14:40	<b>Submicron Simultaneous IR and Raman Microscopy (IR+Raman): Breakthrough Developments in Optical Photothermal IR (O-PTIR) combined with Raman Provide New Capabilities</b>   <i>Mustafa Kansiz, Photothermal Spectroscopy Corp, USA</i>
15:00	<b>Multiphonon anharmonicity in cubic ionic crystals</b>   <i>Eugenio Calandrini, UPMC, France</i>
15:20	Coffee Break
15:40	<b>Ionization, hydration and intermolecular H-bonding in fuel cell membranes</b>   <i>Jean-Blaise Brubach, Synchrotron SOLEIL, France</i>
16:00	<i>Miriam Unger (Bruker Nano)</i>
16:20	<b>IAC meeting + free time</b>
19:00	<b>Tropical Cocktail Party</b>

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## DAY 5 | Friday, September 27<sup>th</sup>

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08:45 **Announcements**

*Why all the fuss about synchrotron IR/THz now?*  
Session Chair: Larry Carr

09:00 **Infrared/THz spectroscopy of Materials at extreme pressures and temperatures** | *Pascale Roy, Synchrotron Soleil, France*

09:35 **Lattice Dynamics of Highly Porous Materials** | *Matthew Ryder, Oak Ridge National Laboratory, USA*

09:55 **Infrared Science at Future Light Sources** | *M. C. Martin, Advanced Light Source, USA*

10:30 Coffee Break

10:50 **SISSI beamline upgrades: new scientific opportunities for the user community** | *Lisa Vaccari, Elettra Synchrotron, Italy*

11:25 **Static and dynamic infrared spectroscopy under extreme conditions using synchrotrons and lasers** | *Paul Dumas, Synchrotron Soleil, France*

12:00 Closing Remarks

14:00 **Trip to Anchieta's Isle (optional)**

19:00 Regular dinner

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## DAY 6 | Saturday, September 28<sup>th</sup>

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07:30 Breakfast + check out

08:00 **Transfer out to Sao Paulo Airport and Campinas Airport**



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