

# APOS 2019 DRAFT PROGRAMME

## Tuesday, 19 November

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| 8:45AM   | <b>Registration Opens</b><br>Science Foyer 23 Symonds St  |         |
| 9:30AM   | <b>CONFERENCE OPENING</b><br>Lecture Theatre PLT1 (303-G20)   |         |
| 9:45AM - 10:30AM   | <b>PLENARY SPEAKER: MEASUREMENTS AND FUNCTIONAL DEVICES</b><br><i>Kentaro Nakamura, Tokyo Institute of Technology</i>   | 9:45AM  |
| 10:30AM - 11:00AM  | <b>Morning Tea &amp; Poster Session</b>   |         |
| 11:00AM - 12:00PM  | <b>INVITED SPEAKER: RANDOM CODE PHASE MODULATION TIME CONTROLLED FIBER OPTIC BRILLOUIN OPTICAL CORRELATION DOMAIN ANALYSIS SENSOR AND ANCHOR LOAD MONITORING</b><br><i>Kyunghwan Oh, Yonsei University</i>                                | 11:00AM |
|  | 87. CHARACTERISATION OF FDM FILAMENT COMPRESSION WITH FBGS<br><i>Asmā Ziyani, Polytech Paris Sud</i>  | 11:30AM |
|  | 131. INVESTIGATION OF DOPPLER SHIFT IN OPTICAL FIBER FREQUENCY SCANNING INTERFEROMETRY RANGING SYSTEM FOR DYNAMIC MEASUREMENT<br><i>Bin Shao, Chongqing University</i>  | 11:45AM |
| 12:00PM - 1:30PM   | <b>Lunch &amp; Poster Session</b>   |         |
| 1:30PM - 3:15PM  | <b>Invited Speaker:</b> Fluorescence detection of pulmonary tuberculosis<br><i>Kristen Maitland, Texas A&amp;M University</i>   | 1:30PM  |
|  | 34. PHOTOACOUSTIC COMPUTED TOMOGRAPHY (PACT) WITH A MULTI-ANGLE SCANNING FIBER-OPTIC ULTRASOUND SENSOR<br><i>Lingxuan Li, Jinan University</i>  | 2:00PM  |
|  | TBC   | 2:15PM  |
|  | 54. FAST, SENSITIVE AND WASH-FREE OPTOFLUIDIC LASER BIOSENSOR - YUAN GONG, UNIVERSITY OF ELECTRONIC SCIENCE AND TECHNOLOGY OF CHINA<br><i>Yuan Gong, University Of Electronic Science And Technology Of China</i>                         | 2:30PM  |
|  | 15. NON-INVASIVE ASSESSMENT OF MEAT FRESHNESS USING MUELLER MATRIX IMAGING POLARIMETRY<br><i>Motahareh Peyvaste, University of Oulu</i>   | 2:45PM  |
| 38. ULTRASENSITIVE HEMOGLOBIN DETECTION BASED ON A GRAPHENE OXIDE FUNCTIONALIZED MICROFIBER PROBE<br><i>Fang Fang, Huazhong University Of Science And Technology</i>           | 3:00PM  |         |
| 3:15PM - 3:45PM  | <b>Afternoon Tea &amp; Poster Session</b>   |         |
| 3:45PM - 5:30PM  | <b>INVITED SPEAKER: RANDOM CODE PHASE MODULATION TIME CONTROLLED FIBER OPTIC BRILLOUIN OPTICAL CORRELATION DOMAIN ANALYSIS SENSOR AND ANCHOR LOAD MONITORING</b><br><i>Il Bum Kwon, Korea Research Institute of Standards and Science</i> | 3:45PM  |
|  | 100. EXTENDING THE DYNAMIC STRAIN SENSING RANG OF PHASE-OTDR WITH FREQUENCY MODULATION PULSE<br><i>Jingdong Zhang, Chongqing University</i>   | 4:15PM  |
|  | 152. FROM SEISMOLOGY TO LASER ULTRASONICS: AN OVERVIEW<br><i>Kasper Van Wijk, The University of Auckland</i>  | 4:30PM  |
|  | TBC   | 4:45PM  |
|  | 8. IMPROVEMENTS OF RESONANT FIBER OPTIC GYROSCOPES USING A RECIPROCAL MODULATION-DEMODULATION TECHNIQUE<br><i>Hanzhao Li, Zhejiang University</i>   | 5:00PM  |
| 149. SIMULTANEOUS MULTI-POINT SENSING IN MULTICORE FIBER USING BRILLOUIN OPTICAL CORRELATION DOMAIN ANALYSIS<br><i>Bhargav Somepalli, The Hong Kong Polytechnic University</i> | 5:15PM  |         |
| 5:30PM - 6:30PM  | <b>Welcome Function</b>   |         |

## Wednesday, 20 November

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| 9:00AM   | <b>Registration Opens</b><br>Science Foyer 23 Symonds St   |         |
| 9:30AM   | <b>PLENARY SPEAKER: REMOTE SENSING OF SUBSURFACE WATER TEMPERATURE USING RAMAN SPECTROSCOPY: A LIDAR-COMPATIBLE APPROACH</b><br><i>Helen Pask, Macquarie University</i>                                      | 9:30AM  |
| 10:15AM - 10:45AM  | <b>Morning Tea &amp; Poster Session</b>  |         |
| 10:45AM - 12:00PM  | <b>INVITED SPEAKER: HARNESSING INTEGRATED PHOTONICS AND OPTICAL NONLINEARITIES FOR LIGHT GENERATION, AMPLIFICATION AND OPTICAL SENSING</b><br><i>Dawn Tan, Singapore University of Technology and Design</i> | 10:45AM |
|  | 2. FLUORINE-PASSIVATION EFFECT IN GE-DOPED OPTICAL FIBER<br><i>Xiaoning Guan, Beijing University of Posts and Telecommunications</i>   | 11:15AM |
|  | 64. THE REFRACTIVE INDEX SENSING BY SEVEN-CORE MCF STRUCTURES<br><i>Wenbin Hu, Wuhan University of Technology</i>  | 11:30AM |
| 155. OPTICAL PROPERTIES OF NANOSTRUCTURED CORE SILICA FIBERS WITH BRAGG GRATINGS<br><i>Ryszard Buczynski, Institute of Electronic Materials Technology</i> | 11:45AM  |         |
| 12:00PM - 1:30PM   | <b>Lunch &amp; Poster Session</b>  |         |
| 1:30PM - 3:00PM  | <b>INVITED SPEAKER: WAVEFRONT SHAPING IN LINEAR AND NONLINEAR COMPLEX MEDIA</b><br><i>Rafael Piestun, University of Colorado</i>   | 1:30PM  |
|  | 78. VISIBLE LIGHT COMMUNICATION-BASED INDOOR POSITIONING FOR MOVING VEHICLES<br><i>Puxi Lin &amp; Zhe Chan, Guangdong Provincial Engineering Technology Research Center on VLC</i>                           | 2:00PM  |
|  | 140. RESEARCH ON DISTRIBUTED OPTICAL FIBER VIBRATION SENSING SYSTEM BASED ON DUAL-INTERFERENCE<br><i>Yu Wang, Taiyuan University of Technology</i>   | 2:15PM  |
|  | 125. SIMULATION ON LOSSY-MODE RESONANCE SENSORS BASED ON SIDE-POLISHED FIBER<br><i>Yan Feng, Jinan University</i>  | 2:30PM  |
|  | 137. RAMAN SPECTROSCOPY AND CHEMOMETRICS FOR IDENTIFYING GRAPHENE TREATED TEXTILES<br><i>Piumika Samanali Garagoda Arachchige, University of Otago</i>   | 2:45PM  |
| 3:00PM - 3:30PM  | <b>Afternoon Tea &amp; Poster Session</b>  |         |
| 3:30PM - 5:00PM  | <b>INVITED SPEAKER: MONITORING MALARIA: INFECTION, DETECTION AND THE IMMUNE RESPONSE</b><br><i>Alison Hobro, Osaka University</i>  | 3:30PM  |
|  | 7. FIBER OPTIC SERS PROBES USING PLASMONIC GOLD NANOSTARS FOR BIOCHEMICAL SENSING<br><i>Yang Ran, Duke University</i>  | 4:00PM  |
|  | 48. PHOTOACOUSTIC IMAGING BEYOND SOFT-TISSUES<br><i>Jami Shephard, The University of Auckland</i>  | 4:15PM  |

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|                 | 107. SIMULTANEOUS OPTICAL AND ELECTROCHEMICAL MONITORING OF BIOTINE ELECTROPOLYMERIZATION ON INDIUM-TIN-OXIDE-COATED OPTICAL FIBER SENSORS<br><i>Mateusz Smietana, Warsaw University Of Technology</i> | 4:30PM |
|                 | 127. SIMULATION FOR HIGH PERFORMANCE PLASMONIC SENSOR BASED ON HYPERBOLIC METAMATERIALS<br><i>Shiqi Hu, Jinan University</i>   | 4:45PM |
| 5:00PM - 6:30PM | <b>Equity Workshop</b>   |        |
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## Thursday, 21 November

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|---|--|---------|
| 9:00AM  | <b>Registration Opens</b><br>Science Foyer 23 Symonds St   |         |
| 9:30AM  | <b>PLENARY SPEAKER:</b> CHEMICAL AND PHYSICAL FUNCTIONALIZATION OF OPTICAL FIBERS AT THE NANO/MICRON-SCALE: PATHWAY TO NOVEL AND IMPROVED SENSORS<br><i>Heike Ebendorff-Heidepriem, The University of Adelaide</i>               | 9:30AM  |
| 10:15AM - 10:45AM   | <b>Morning Tea &amp; Poster Session</b>  |         |
| 10:45AM - 12:00PM   | <b>INVITED SPEAKER:</b> ONE-SHOT 3D IMAGING USING ULTRAFAST ALL-OPTICAL HILBERT TRANSFORM WITH CHIRPED OPTICAL FREQUENCY COMB<br><i>Takashi Kato, The University of Electro-Communications</i>                                   | 10:45AM |
|   | 25. DUAL-WAVELENGTH BRILLOUIN/ERBIUM FIBER LASER WITH OVER 50-GHZ FREQUENCY SPACING<br><i>Mo Chen, National University of Defense Technology</i>   | 11:15AM |
|   | 67. LABEL-FREE OPTOFLUIDIC SENSOR FOR IN-VITRO CELL-MICROENVIRONMENT PH MONITORING<br><i>Cesar Sanchez Huertas, Integrated Photonics And Applications Centre</i>   | 11:30AM |
|   | 104. HIGH-QUALITY OPTICAL WHISPERING-GALLERY MODE RESONATORS FOR DIELECTRIC TUNING AND SENSING APPLICATIONS<br><i>Farhan Azeem, University of Otago</i>  | 11:45AM |
| 12:00PM - 1:30PM  | <b>Lunch &amp; Poster Session</b>  |         |
| 1:30PM - 3:15PM   | <b>INVITED SPEAKER:</b> ROTATION MEASUREMENTS WITH A PASSIVE RESONANT OPTICAL GYROSCOPE<br><i>Huilian Ma, Zhejiang University</i>  | 1:30PM  |
|   | 18. OPTICAL AND PLASMONIC TUNING OF WATER-BASED LENSES<br><i>John Canning, UTS</i>   | 2:00PM  |
|   | 16. HIGH-Q AND HIGH-SENSITIVITY REFRACTIVE INDEX SENSOR BASED ON PHOTONIC CRYSTAL DOUBLE-SLOT MICRORING RESONATOR<br><i>Nishan Wu, Huazhong University of Science and Technology</i>   | 2:15PM  |
|   | 68. CONTINUOUS TUNABILITY OF MAGNESIUM FLUORIDE MICRORESONATOR PARAMETRIC OSCILLATIONS<br><i>Toby Bi, The University of Auckland</i>   | 2:30PM  |
|   | 109. MICROCAVITY IN-LINE MACH-ZEHNDER INTERFEROMETER FOR SMALL VOLUME LABEL-FREE BIOSENSING: CONCEPT VERIFICATION BY THIN AL <sub>2</sub> O <sub>3</sub> FILM DEPOSITION<br><i>Monika Janik, Warsaw University Of Technology</i> | 2:45PM  |
| 21. QUASI-DISTRIBUTED GAS SENSING BY COHERENT FMCW INTERFEROMETRY<br><i>Xiutao Lou, Harbin Institute Of Technology</i>                                    | 3:00PM   |         |
| 3:15PM - 3:45PM   | <b>Afternoon Tea &amp; Poster Session</b>  |         |
| 3:45PM - 5:30PM   | <b>INVITED SPEAKER:</b> COHERENT DETECTION FOR PHASE-SENSITIVE OTDR<br><i>Zinan Wang, University of Electronic Science and Technology of China</i>   | 3:45PM  |
|   | 106. DIGITAL DIFFERENTIAL COHERENT OTDR BASED ON HETEROGENEOUS DUAL-SIDEBAND LFM PULSE FOR DISTRIBUTED ACOUSTIC SENSING<br><i>Junfeng Jiang, Tianjin University</i>  | 4:15PM  |
|   | 39. AVAILABILITY VERIFICATION OF BRILLOUIN GAIN-SPECTRUM-MODEL-FITTING RING-CIRCUMFERENTIAL-STRAIN MEASUREMENT USING SIMULATION EXPERIMENTS<br><i>Hiroshi Naruse, Mie University</i>   | 4:30PM  |
|   | 85. DISTRIBUTED FIBRE SENSORS FOR THE ALPINE FAULT OF NEW ZEALAND<br><i>James Loveday, The University Of Auckland</i>  | 4:45PM  |
|   | 128. ENHANCING FREQUENCY RESPONSE OF PHASE-SENSITIVE OTDR FOR INTERROGATING WEAK REFLECTOR ARRAY SYSTEM BY USING OFDM AND VERNIER EFFECT<br><i>Mengshi Wu, Shanghai Jiao Tong University</i>                                     | 5:00PM  |
| 97. THREAT LEVEL DISCRIMINATION OF INTRUSIONS WITH DAS<br><i>Huijuan Wu &amp; Yun-jiang Rao, University of Electronic Science and Technology of China</i> | 5:15PM   |         |
| 6:30PM - 9:00PM   | <b>Conference Dinner - The Maritime Room</b>   |         |

## Friday, 22 November

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|-------------------|---|---------|
| 9:00AM            | <b>Registration Opens</b><br>Science Foyer 23 Symonds St  |         |
| 9:30AM - 10:15AM  | 145. INFLUENCE ON AMMONIA GAS CONCENTRATION DETECTION INDUCED BY OPTICAL PATH LENGTH BASED ON NEW GAS ABSORPTION CELL<br><i>Yuan Shi, Shanghai University</i> | 9:30AM  |
|                   | 55. PHASE TRANSITION ONLINE MONITORING OF FAPBI <sub>3</sub> PEROVSKITE THROUGH RAMAN SPECTROMETER<br><i>Yinlan Ruan, University of Adelaide</i>              | 9:45AM  |
|                   | 13. EVANESCENT WAVE OPTOFLUIDIC ABSORBANCE SENSOR BASED ON COILED OPTICAL NANOFIBER<br><i>Lei Zhang, Zhejiang University</i>                                  | 10:00AM |
| 10:15AM - 10:45AM | <b>Morning Tea &amp; Poster Session</b>   |         |
| 10:45AM - 12:00PM | 130. FEMTOSECOND LASER-INScribed FIBER-INTERFACE DIRECTIONAL COUPLER FOR REFRACTIVE INDEX MEASUREMENT<br><i>Changrui Lian, Shenzhen University</i>            | 10:45AM |
|                   | 150. MULTIMODAL INTERFERENCE IN HETERO-CORE-FIBER STRUCTURE FOR STRAIN AND TEMPERATURE SENSING<br><i>Sonoko Hagihara, Tokyo Institute of Technology</i>       | 11:00AM |
|                   | 73. LOCKING THE LASER WAVELENGTH TO THE PEAK OF PHASESHIFT GRATING IN LONG TERM AE SENSING<br><i>Xuezhi Zhang, Tianjin University</i>                         | 11:15AM |
|                   | 76. CHARACTERIZATION OF YAP:CE FIBER DOSIMETER FOR RADIOTHERAPY APPLICATION<br><i>Mao Li &amp; Dr Qiang Guo, Shanghai University</i>                          | 11:30AM |
| 11:45AM - 12:00PM | <b>Conference Closing</b>   |         |