



National Vacuum Electronics Conference NVEC 2019

Programme and Book of Abstracts

*Technology and Innovation Centre,
University of Strathclyde,
Glasgow, G1 1RD, UK*

Wednesday 13 November 2019

Sponsor

IOP | Institute of Physics
**Particle Accelerators
and Beams Group**

**SUPA, Department of Physics,
University of Strathclyde**

Organisers:

Dr. Liang Zhang, Professor Adrian W. Cross

Conference Schedule

Wednesday 13 November 2019

8:30 – 9:15	Arrival, registration
9:15 – 9:20	Announcements Prof. Adrian Cross
9:20 – 11:00	<i>Session I Microwave Vacuum Electronic Devices</i> Chair: Dr. Craig Donaldson
9:20 – 9:40 (1)	Tianzhong Zhang School of Electronic Engineering and Computer Science, Queen Mary University of London <i>“Design of a high power W-band rising-sun anode magnetron”</i>
9:40 – 10:00 (2)	Laurence Nix SUPA, Department of Physics, University of Strathclyde, Glasgow, G4 0NG, UK <i>“The design of a 48GHz gyrokystron amplifier for accelerator applications”</i>
10:00 – 10:20 (3)	Simon Foulkes University of Huddersfield, UK <i>“Metamaterial Based RF Source”</i>
10:20 – 10:40 (4)	Jin Zhang School of Electronic Engineering and Computer Science, Queen Mary University of London <i>“Design of 0.365-THz backward wave oscillators using SDG/FWG SWS and Sheet Beam”</i>
10:40 – 11:00 (5)	Shankaranandh Balakrishnan University of Huddersfield, UK <i>“Instantaneous Time Mirror Amplification of Electromagnetic Waves”</i>
11:00 – 11:30	Coffee Break & meet our industrial partners
11:30 – 12:30 13:30 – 14:30	<i>Session II Millimeter wave sources and applications</i> Chairs: Dr. Tianzhong Zhang and Dr. Ivan V. Konoplev
11:30 – 11:50 (1)	Graham Smith School of Physics & Astronomy, University of St Andrews <i>“Microwave sources in the applications of magnetic resonance”</i>
11:50 – 12:10 (2)	John Walker Integra Technologies, Inc., USA <i>“The State of the Art in Solid-State Power Generation at RF and Microwave Frequencies”</i>
12:10 – 12:30 (3)	Liang Zhang SUPA, Department of Physics, University of Strathclyde, Glasgow, UK <i>“Design and simulation of a 0.37 THz gyro-TWA”</i>

12:30 – 13:30	Lunch
13:30 – 13:50 (4)	Jonathan Gratus Department of Physics, Lancaster University, Lancaster LA1 4YB, UK Cockcroft Institute, Keckwick Lane, Daresbury, Warrington WA4 4AD, UK <i>“The Accurate Prediction of Longitudinal Electromagnetic Mode Profile Sculpting in Wire Media using Concepts of Spatial Dispersion”</i>
13:50 – 14:10 (5)	Jue Wang High Frequency Electronics Group, School of Engineering, Glasgow University <i>“Multi-Gigabit Wireless Links using Resonant Tunneling Diode”</i>
14:10 – 14:30 (6)	Craig W. Robertson SUPA, Department of Physics, University of Strathclyde, Glasgow, UK <i>“Review of a W-band TWT for Satellite Communications”</i>
14:30 – 15:00	Coffee Break & meet our industrial partners
15:00 – 16:40	<i>Session III Vacuum Devices in Accelerators</i> Chair: Prof. Graeme Burt
15:00 – 15:20 (1)	Ivan V. Konoplev JAI, Department of Physics, University of Oxford, Oxford, OX1 3RH, UK. <i>“Asymmetric SRF dual axis cavity for ERLs: studies and design for ultimate performance and applications”</i>
15:20 – 15:40 (2)	Taylor Boyd Department of Physics, Lancaster University, Lancaster LA1 4YB, UK Cockcroft Institute, Keckwick Lane, Daresbury, Warrington WA4 4AD, UK <i>“The Accurate Prediction of Longitudinal Electromagnetic Mode Profile Sculpting in Extending our successful field profile shaping method to different realisations of wire media”</i>
15:40 – 16:00 (3)	Anthony J. Gilfellon STFC, ASTeC, Daresbury Laboratory, WA4 4AD, UK <i>“RF Analysis of the Load Lock Photocathode Injector Upgrade for the 10Hz Repetition Rate CLARA Gun”</i>
16:00 – 16:20 (4)	Shadike Saitiniyazi Engineering Department, Lancaster University, LA1 4YW, UK Cockcroft Institute, Daresbury Laboratory, Warrington, WA4 4AD, UK <i>“Implications of beam filling patterns on the design of recirculating energy recovery linacs”</i>
16:20 – 16:40 (5)	Ruth C. Peacock Lancaster University, Lancaster, United Kingdom <i>“The pulsed DC large electrode system for breakdown studies at CERN”</i>
16:40 – 16:50	Final remarks, discussion