

Final Program of Virtual 7th ITG-IVEW 2020 and 13th IVeSC 2020

Time is given in Paris Time (Central European Summer Time (CEST))

**Speakers should join the Virtual Conference latest
10 minutes ahead of their talk**

Tuesday, May 26, 2020:

Chairmen Wolfram Knapp Jean-Michel Roquais 14:45	Welcome and Opening of Conference	IVEW IVeSC
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**Oral Session 1 (OS1) (IVeSC+IVEW): History and Perspectives of Vacuum
Electronics and Electron Emission (FE+TE) (15:00 – 16:30)**

1.Georg Gaertner (invited) (30') 15:00 – 15:30	Enabling technologies and progress of vacuum electronics	IVeSC 8
2.Wolfram Knapp (invited) (30') 15:30 – 16:00	Using Fowler-Nordheim plot for the comparison of electron emission efficiency of field (FE) and thermal emission (TE) cathodes	IVEW 23
3.Kevin Jensen (invited) (30') 16:00 – 16:30	A reformulated general thermal-field-photoemission theory and application to characterization of compound emitters	IVeSC 37
4.Richard G. Forbes (20') 16:30 – 16:50	Progress in reshaping field electron emission theory for the benefit of experimental scientists and technologists	IVeSC 21

Wednesday, May 27, 2020:

Oral Session 2 (OS2) (IVeSC): Thermionic Cathodes I

(08:30 – 10:10)

1. Shengyi Yin (invited) (30') 08:30 – 09:00	High emission dispenser cathodes with innovative impregnant	IVeSC 1
2. Jinshu Wang (invited) (30') 09:00 – 09:30	Preparation of dispenser cathodes by fast sintering method	IVeSC 5
3. Xiaoxia Wang (20') 09:30 – 09:50	Research Progress in new types of Thermionic Cathodes	IVeSC 2
4. Xingqi Wang (20') 09:50 – 10:10	A novel fabrication method of the Y-Gd-Hf-O W base directly-heated cathode	IVeSC 9

10:10 – 10:30

Coffee Break

Oral Session 3 (OS3) (IVEW): Gyrotrons I

(10:30 – 11:40)

1. Stefan Illy (invited)(30') 10:30 – 11:00	High power gyrotron development at KIT: Current status and future prospects	IVEW 10
2. Maria M. Melnikova (20') 11:00 – 11:20	Self-consistent simulation of frequency stabilization in a gyrotron with delayed reflection	IVEW 21
3. Tobias Ruess (20') 11:20 – 11:40	From ITER to DEMO: Towards multi-purpose multi-MW gyrotrons operating above 200 GHz	IVEW 4

11:40 – 14:30

Lunch Break

Oral Session 4 (OS4) (IVEW): Gyrotrons II

(14:30 – 15:40)

1. Alberto Leggieri (invited) (30') 14:30 – 15:00	Upgrade of the European ITER 170 GHz 1 MW CW industrial gyrotron (TH1509)	IVEW 24
2. Laurent Krier (20') 15:00 – 15:20	Considerations for the operation of a 140 GHz 1 MW gyrotron at 175 GHz for CTS plasma diagnostics at W7-X	IVEW 25
3. Alexander Marek (20') 15:20 – 15:40	Simulation of a feedback system for coupled gyro-devices at 263 GHz	IVEW 14

15:40 – 16:00

Coffee Break

Oral Session 5 (OS5) (IVeSC): Thermionic Cathodes II

(16:00 – 17:30)

1. Georg Gaertner (20') 16:00 – 16:20	Peculiarities of Ba scandate cathodes and constituents of a model	IVeSC 7
2. Christof Dietrich (20') 16:20 – 16:40	Overview of Thales cathode technology and new developments	IVeSC 6
3. Justin Demory (20') 16:40 – 17:00	Qualification of M-type cathode up to 4 A/cm ² for space applications	IVeSC 12
4. Bernard Vancil (invited) (30') 17:00 – 17:30	Miniature klystron for CubeSats	IVeSC 3

Poster Session 1 (PS1) (IVeSC)

PS1_1 Thermionic Cathodes

1.Xinping Lv et al.	Preparation of new dispenser cathode's active substance using freeze-drying method	IVeSC 4
2.Yunfei Yang et al.	High temperature brazing using Co based alloy filler for scandia doped dispenser cathode application	IVeSC 11

PS1_2 Traveling Wave Tubes and Vircator

1.Igor A. Navrotsky et al	Design, simulation and fabrication of an electron optic system with sheet electron beam for a sub-THz traveling-wave tube	IVeSC 33
2.Andrey V. Starodubov et al.	Development of the pseudospark-source electron gun and a slow wave structure for a millimeter-band backward-wave oscillator	IVeSC 23
3.Yurii A. Kalinin et al.	Design and study of the low-voltage vircator utilizing spent electron beams	IVeSC 32

PS1_3 Field Emission I

1.Andrey Antonov et al.	Four-parameter model for a FEE signal	IVeSC 25
2.Ilya N. Kosarev et al.	Field emission properties of pyrographite cathodes	IVeSC 26
3.Ilya N. Kosarev et al.	Field emissive properties of carbon nanotube threads	IVeSC 27
4.Evgeniy P. Sheshin et al	Polyacrylonitrile fibers as emissive materials	IVeSC 28
5.Richard G. Forbes	Using Murphy-Good plots to analyze measured field emission current-voltage data	IVeSC 29
6.Richard G. Forbes	Using Fowler-Nordheim or Murphy-Good plots to measure characteristic values of field and scaled field	IVeSC 30
7.Richard G. Forbes	The different mathematical approximation formats for the field emission special mathematical function $v(x)$	IVeSC 31
8.Yunkang Cui et al.	Investigation of field emission properties of SiC nanowires and their applications in flexible field emission displays	IVeSC 35

Thursday, May 28, 2020:

Oral Session 6 (OS6) (IVeSC): Field Emission I

(08:50 – 09:40)

1.Masahiro Sasaki (20') 08:50 – 09:10	Unrevealed aspects of field emission from nanocarbon materials	IVeSC 22
2.Nikolay Egorov (inv.) (30') 09:10 – 09:40	Field electron emission spectroscopy of silicon carbide	IVeSC 24
3.Evgeniy P. Sheshin (Abstract on Website only)	Field emission properties of carbon materials	IVeSC 17
4.Wei Lei (Abstract on Website only)	Electron transparency of graphene and application in field-emission source	IVeSC 10

09:40 – 10:00

Coffee Break

Oral Session 7 (OS7) (IVEW): Traveling Wave Tubes

(10:00 – 11:30)

1.Ernst Bosch (invit.) (30') 10:00 – 10:30	Low-power/ high-power SPACE qualified RADAR TWTs for earth observation	IVEW 27
2.Philip Birtel (20') 10:30 – 10:50	Multipaction Analysis in Traveling Wave Tubes	IVEW 26
3.Moritz Hägermann (20') 10:50 – 11:10	Instabilities in helix traveling-wave tubes	IVEW 2
4.Andrey V. Starodubov (20') 11.10 – 11:30	Features of nanoseconds and picoseconds laser ablation for microfabrication of planar slow-wave structures for millimeter-band low-voltage tubes with sheet electron beam	IVEW 17

11:30 – 14:30

Lunch Break

Oral Session 8 (OS8) (IVEW): Vacuum Interrupters, Breakdowns (14:30 – 16:10)

1.Sergey Gortschakov (invited) (30') 14:30 – 15:00	Properties of vacuum arcs generated by switching RMF contacts at different ignition positions	IVEW 1
2.Dietmar Gentsch (invited) (30') 15:00 – 15:30	High speed observation of vacuum arcs between different contact diameter at TMF contact pair	IVEW 7
3.Andreas Lawall (20') 15:30 – 15:50	Behavior of vacuum interrupters during switching operations with a high rate of rise for recovery voltage (RRRV)	IVEW 3
4.Rolf Behling (20') 15:50 – 16:10	Growth of electric field enhancing precursors for vacuum high-voltage breakdown	IVEW 29

16:10 – 16:30

Coffee Break

Oral Session 9 (OS9) (IVeSC): Photocath., High-Brightness Cath. (16:30 – 18:00)

1.Pieter Kruit (invited) (30') 16:30 – 17:00	Sources and blankers for ultra-fast electron microscopy	IVeSC 36
2.Romain Ganter (inv)(30') 17:00 – 17:30	Photocathodes for electron accelerators	IVeSC 38
3.John Smedley (inv) (30') 17:30 – 18:00	Photocathodes-a materials science perspective	IVeSC 34
4.Charles Hunt (Abstract on Website only)	Photocathodes in high-speed X-Ray imaging arrays	IVeSC 15

Poster Session 2 (PS2) (IVEW)

PS2_1 Gyrotrons

1.Andrey G. Rozhnev et al.	Modelling of a complex cavity resonator by the nonfixed field theory for the 0.4 THz second-harmonic frequency-tunable gyrotron	IVEW 22
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PS2_2 Traveling Wave Tubes

1.Nikita M. Ryskin et al.	Studies on high-power millimeter-band traveling wave tube amplifiers with multiple sheet electron beams	IVEW 8
2.Roman .A. Torgashov et al.	Simulation and experimental study of planar slow-wave structures on dielectric substrates for microfabricated traveling-wave tubes	IVEW 9

PS2_3 Field Emission II

1.Evgeniy P. Sheshin et al.	Modeling of multicathode field emission configurations	IVEW 15
2.Ivan Sokolov et al.	Multiscale simulation of field emission triode nanostructures	IVEW 19
3.Nikolay Egorov et al.	Mathematical modelling of triode field emission system with sharp-edged cathode	IVEW 20
4.Sergey P. Morev et al.	Experimental study of electron guns with field emission and large emitter tips	IVEW 31

Friday, May 29, 2020:

Oral Session 10 (OS10) (IVeSC+IVEW): Electron Optics Design / Electron Transport/ Photocathodes, THz Devices (08:30 – 09:50)

1. Pengpeng Wang (20') 08:30 – 08:50	Design of sheet beam electron gun with PCM focusing system for G-band EIK	IVeSC 14
2. Yutong Shi (20') 08:50 – 09:10	Study and optimization of electron transport in sub-100nm nanoscale vacuum channel transistor	IVeSC 13
3. Jun Dai (20') 09:10 – 09:30	Reliability experiments of a high current density photocathode for high-power terahertz devices	IVeSC 16
4. Anton Malygin (20') 09:30 – 09:50	FLUTE, a compact versatile linac-based source for coherent ultra-short THz pulses	IVEW 28

09:50 – 10:10

Coffee Break

Oral Session 11 (OS11) (IVeSC+IVEW): Field Emission II (10:10 – 11:10)

1. Simon Edler (20') 10:10 – 10:30	Silicon field emitters fabricated by saw-dicing and TMAH etching	IVeSC 19
2. Robert D. Ławrowski (20') 10:30 – 10:50	Individually addressable silicon field emission cathodes fabricated by laser micromachining	IVeSC 20
3. Matthias Hausladen (20') 10:50 – 11:10	Fast pulse source for field emission applications	IVEW 18
4. Evgeniy P. Sheshin (invited) (Abstract on Website only)	Luminescent light sources based on carbon material cold cathode	IVeSC 18

Chairmen Wolfram Knapp Jean-Michel Roquais 11:10	Closing of Conference	IVEW IVeSC
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