

CURRICULUM VITAE

Valeriu M. FILIP, Professor emeritus

I. PERSONAL DATA:

Name: Valeriu M. FILIP
Nationality: Romanian

Languages

known:	<u>English</u>	<u>writing</u>	<u>reading</u>	<u>speaking</u>
		very good	very good	very good
	<u>French</u>	good	very good	good
	<u>Romanian</u>	(mother tongue)		

II. ACADEMIC DEGREES:

Ph.D. in Physics, Faculty of Physics, University of Bucharest, Romania, January 20th, 1998.
 Thesis title: **Contributions to the Study of Electron Emission from Semiconductors under High Electric Fields and Applications.**

M.S., Solid-State Physics, Faculty of Physics, University of Bucharest, Romania, 1979.
 B.S. and M.S. Thesis on "Phonon Drag Effects in Solid State Transport Phenomena"

B.S., Physics, Faculty of Physics, University of Bucharest, Romania, 1978.

III. STAGES OF UNIVERSITY EDUCATION:

1974-1978 Faculty of Physics, University of Bucharest, Romania, Subject: Physics
 1978-1979 Faculty of Physics, University of Bucharest, Romania, Subject: Solid State Physics
 1989-1993 Faculty of Physics, University of Bucharest, Romania
 Subject: Solid State Physics and Applications, doctoral preparing programme

IV. FELLOWSHIPS:

NUFFIC Fellowship, Eindhoven University of Technology, Faculty of Physics, Eindhoven, the Netherlands, 1996.

JSPS Post Doctoral Fellowship, Nagoya Institute of Technology, Graduate School of Engineering, Nagoya, Japan, 1998-2000.

V. PROFESSIONAL BACKGROUND:

Period	Positions and responsibilities	Institution
Oct.1979 - Oct.1982	Physicist: research duties on ZrH ₂ moderated TRIGA thermal reactor at IRNE Pitesti-Colibasi, Romania.	Research Institute for Nuclear Power Reactors (IRNE), Pitesti-Colibasi, Romania
Oct. 1982 - Oct. 1983	Research Physicist: research duties on ZrH ₂ moderated TRIGA thermal reactor at IRNE Pitesti-Colibasi, Romania.	IRNE, Reactor Security Division
Oct. 1983 - Feb. 1992	Assistant Professor: laboratory and seminar courses in Mechanics and Introductory Thermal Physics for first year physics students.	University of Bucharest, Faculty of Physics, Thermal Physics Department

Feb. 1992 - May 1998	Lecturer: lecture courses on Thermal Physics and laboratory and seminar courses in Introductory Thermal Physics for first year physics students; lecture courses on Materials and Technologies for Environmental Protection for fourth and fifth year physics students.	University of Bucharest, Faculty of Physics, Thermal Physics Department
May 1998 – May 2000	JSPS Post Doctoral Fellow: research activities in vacuum microelectronics.	Nagoya Institute of Technology, Graduate School of Engineering, Nagoya, Japan
May 2000 – January 2001	Lecturer: lecture courses on thermal physics and laboratory and seminar courses in introductory Thermal Physics for first year physics students; lecture courses on Materials and Technologies for Environmental Protection for fourth and fifth year physics students.	University of Bucharest, Faculty of Physics, Thermal Physics Department
January 2001 – July 2003	Associate Professor: lecture courses on Thermal Physics for first year physics students; lecture courses on Materials and Technologies for Environmental Protection for fourth and fifth year physics students.	University of Bucharest, Faculty of Physics, Thermal Physics Department
July 2003 – April 2005	Senior Research Associate. Researches on: 1. Silicon oxide/silicon nitride for microelectronic and optoelectronic applications. 2. High quality high-K dielectric films and their applications	City University of Hong Kong, Electronic Engineering Department and Optoelectronics Research Centre
April 2005 – June 2006	Associate Professor: lecture courses on Thermal Physics for first year physics students; lecture courses on Materials and Technologies for Environmental Protection for fourth and fifth year physics students.	University of Bucharest, Faculty of Physics, Thermal Physics Department
June 2006 – September 2006	Research Fellow. Researches on: Electron tunnelling through ultra-thin barriers and Electroluminescence of Si nanodots embedded in SiO ₂ or oxynitride matrices.	City University of Hong Kong, Electronic Engineering Department
September 2006 – February 2008	Associate Professor: undergraduate lecture courses on Thermal Physics; graduate lecture courses in Investigative Methods for the Environment.	University of Bucharest, Faculty of Physics, Thermal Physics Department
June 2008 – September 2008	Research Fellow. Researches on: Rare earths-based ultra-thin MOS films.	City University of Hong Kong, Electronic Engineering Department
June 2011 – September 2011	Research Fellow. Researches on: Preparation of Nanoparticle-Embedded High-k Dielectric Films for Flash Memory Applications.	City University of Hong Kong, Electronic Engineering Department
June 2013 – August 2013	Research Fellow. Researches on: Investigation of Rare-Earths Stacked Dielectrics for Next Generation Nano CMOS Device Applications (Project No. 7002761).	City University of Hong Kong, Electronic Engineering Department

April 2017 – July 2107	Senior Research Fellow. Researches on: ESD Protection for 22 nm CMOS Technology (Project No. 9041919)	City University of Hong Kong, Electronic Engineering Department
February 2008 – October 2019	Professor: undergraduate lecture courses on Thermal Physics; graduate lecture courses in Investigative Methods for the Environment.	University of Bucharest, Faculty of Physics, Thermal Physics Department
October 2019 - present	Professor emeritus	University of Bucharest, Faculty of Physics
March 2018 – October 2021	Senior Research Scientist	National Institute for Airspace Research “Elie Carafoli”, Bucharest, Romania
January 2018 - present	Senior Research Scientist	Research Center for Surface Science and Nanotechnology, University POLITEHNICA of Bucharest

Subjects of research:	Moderators for nuclear thermal reactors: ZrH₂	(1979-1983)
	Solid state transport phenomena: Drag effects	(1983-1992)
	Solid state high field transient phenomena	(1992-1996)
	Vacuum microelectronics	(1994-1999)
	Vacuum nanoelectronics	(1999-present)
	Charge transport in nano-structures	(2003-present)
	Environmental physics	(2005-present)

- **84 published papers in referred journals, 78 of them in the following international journals: Journal de Physique I, Applied Surface Science, Journal of Vacuum Science and Technology A, Journal of Vacuum Science and Technology B, Review of Scientific Instruments, Ultramicroscopy, Japanese Journal of Applied Physics, European Physical Journal - Applied Physics, Applied Physics Letters, Microelectronics Engineering, Microelectronics Reliability, Thin Solid Films, Journal of Nanoscience and Nanotechnology, Journal of Instrumentation, Journal of Atmospheric and Solar-Terrestrial Physics, Vacuum, Solid State Electronics Letters, Atmospheric Measurement Techniques.**
- **The published papers have been cited over 1500 times in the specialized literature.**
- **33 papers presented at international conferences.**
- **Hirsch index =15**
- **i10 – index = 30**

VI. PUBLICATIONS IN REFERRED JOURNALS:

1. I. Padureanu, S. Rapeanu, **V. Filip**, G. Rotarescu, and C. Craciun, *Neutron Multiple Scattering on Cylindrical Samples, Diffraction Experiments*, Revue Roumaine de Physique, Tome 28(5), pp. 431-438 (1983).
2. **V. Filip**, C. N. Plavitu, *A Method for Numerical Evaluation of the Phonon-Phonon Relaxation Time Dependence on the Wave Vector and on Temperature*, ANALELE UNIVERSITATII DIN BUCURESTI (FIZICA) XXXVI, pp.41-47 (1987).
3. S. N. Rapeanu, I. Padureanu, **V. Filip**, *Calculated Frequency Spectra in ZrH₂ and ZrD₂*, Revue Roumaine de Physique, Tome 32(3), pp.331-341 (1987).
4. **V. Filip**, C. N. Plavitu, *A Method for Numerical Computation of Phononic Relaxation Time and Lattice Thermal Conductivity Applied to a 1-D Crystal* (in romanian), ANALELE UNIVERSITATII DIN BUCURESTI (FIZICA) XXXVIII, pp.49-56 (1989).
5. **V. Filip**, C. N. Plavitu, *Electron Velocity-Field Characteristic Computed in the Boltzmann Equation Formalism with the Electron-Polar Optical Phonon as the Dominant Interaction Process*, ANALELE UNIVERSITATII DIN BUCURESTI XLIII, pp. 36-42 (1994).
6. **V. Filip**, C. N. Plavitu, *Possible Generation of Transient Thz Electronic Drift Effects in a semiconductor by a High Electric Field*, JOURNAL DE PHYSIQUE I, Vol. 6, N° 3, pp. 403-412 (1996).
7. D. Nicolaescu, **V. Filip**, *Modeling of a magnetic sensor based on vacuum field emission*, Applied Surface Science 94/95, pp. 87-93 (1996).

8. D. Nicolaescu, **V. Filip**, P. R. Wilshaw, *Modeling of the field emission microtriode with emitter covered with porous silicon*, Applied Surface Science 94/95, pp. 79-86 (1996).
9. **V. Filip**, D. Nicolaescu, C.N. Plavitu, F. Okuyama, *Analysis of microwave generation by field emitted electrons moving in crossed electric and magnetic fields*, Applied Surface Science vol. 111, pp. 185- 193 (1997).
10. D. Nicolaescu, **V. Filip** , F. Okuyama, *Proposal for a new self focusing configuration involving porous silicon for field emission flat panel displays*, Journal of Vacuum Science and Technology A, vol.15(4), pp. 2369-2374 (1997).
11. D. Nicolaescu, **V. Filip**, F. Okuyama, *Analysis of a pressure sensor based on an array of collector assisted field emission triodes*, Review of Scientific Instruments 68(12), pp. 4615-4620 (1997).
12. D. Nicolaescu, **V. Filip** , F. Okuyama, *A conceptual design for a microelectronic ionization vacuum gauge*, Applied Surface Science vol. 126(3-4), Part II, pp. 292-309 (1998).
13. D. Nicolaescu, **V. Filip** , F. Okuyama, *Study of the inverted-magnetron cold emission microelectronic vacuum gauge*, Ultramicroscopy 73, pp. 129-137 (1998).
14. **V. Filip**, D. Nicolaescu, C.N. Plavitu, F.Okuyama, *Transient and stationary field emission currents from semiconductors computed by a simple semi-classical method*, Journal of Vacuum Science and Technology B 16(2), March, pp. 888-894 (1998).
15. D. Nicolaescu, **V. Filip** , F. Okuyama, *Proposal for a new UV-light generating device based on cold electron emission*, Journal of Vacuum Science and Technology A 16(5), Sept./Oct., pp. 2885-2889 (1998).
16. **V. Filip**, D. Nicolaescu, F. Okuyama, C.N. Plavitu, J. Itoh, *Electron Field Emission from Semiconductors through Oxide Layers: Possible Transport Effects*, Applied Surface Science, vol. 146(1-4), pp. 347-356 (1999).
17. D. Nicolaescu, **V. Filip**, J. Itoh, F. Okuyama, *Modelling of a Miniaturised Mass Spectrometer with Field Emission Electron Source*, Applied Surface Science, vol. 146(1-4), pp. 217-223 (1999).
18. **V. Filip**, D. Nicolaescu, F. Okuyama, C.N. Plavitu, J. Itoh, *Transport Phenomena Related to Electron Field Emission from Semiconductors through Thick Oxide Layers*, Journal of Vacuum Science and Technology B 17(2), March/April, pp. 520-525 (1999).
19. D. Nicolaescu, **V. Filip**, J. Itoh, F. Okuyama, *Modeling of Field Emission Microtriodes with Si Semiconductor Emitters*, Journal of Vacuum Science and Technology B 17(2), March/April, pp. 542-546 (1999).
20. **V. Filip**, D. Nicolaescu, F. Okuyama, J. Itoh, *Electrons Motion and Confinement in the Orbitip Vacuum Gauge: I. Theory*, Ultramicroscopy, 79(1-4), pp. 151-158 (1999).
21. D. Nicolaescu, **V. Filip**, F. Okuyama, J. Itoh, *Electrons Motion and Confinement in the Orbitip Vacuum Gauge: II. Modelling Results*, Ultramicroscopy, 79(1-4), pp. 159-166 (1999).
22. D. Nicolaescu, **V. Filip**, J. Itoh, I. Kleps *Probe-anode as a characterization tool for field emission arrays*, Japanese Journal of Applied Physics 38(11), pp. 6237-6239 (1999).
23. **V. Filip**, *Modeling of the Electron Field Emission from n-Silicon/N-Diamond Composite Structures*, ANALELE UNIVERSITATII DIN BUCURESTI (Physics) XLVIII , pp. 27-36 (1999).
24. **V. Filip**, D. Nicolaescu, F. Okuyama, and C. N. Plavitu, *Calculation of the field emission current density from n-Si through injection in N-doped diamond*, Journal of Vacuum Science and TechnologyB 18(2), pp. 937-941 (2000).
25. D. Nicolaescu, **V. Filip**, J. Itoh, and F. Okuyama, *Proposal and modelling of a novel thermal microprobe using n-Si/nitrogen doped diamond cathodes*, Journal of Vacuum Science and Technology B 18(2), pp. 1073-1076 (2000).
26. D. Nicolaescu, **V. Filip**, J. Itoh, and F. Okuyama, *Analysis of a pressure sensor using n-Si/nitrogen doped diamond cathodes*, Journal of Vacuum Science and Technology B 18(2), pp. 1077-1080 (2000).
27. D. Nicolaescu and **V. Filip**, *Vacuum microelectronics devices based on the controlled electron motion in electric and magnetic fields*, European Physical Journal - Applied Physics, 10(1), pp. 33-37 (2000).
28. D. Nicolaescu, **V. Filip**, and J. Itoh, *Focusing Properties of a Novel Dual-Gate Edge Emitter*, Japanese Journal of Applied Physics 39(10), pp. 5800-5804 (2000).
29. **V. Filip**, D. Nicolaescu, and F. Okuyama, *Modelling of the Ellectron Field Emission from Carbon Nanotubes*, Journal of Vacuum Science and Technology B 19(3), pp. 1016-1022 (2001).
30. D. Nicolaescu, **V. Filip**, and J. Itoh, *Focusing Properties of Dual-Gate Field Emitters*, Journal of Vacuum Science and Technology B 19(3), pp. 892-896 (2001).
31. D. Nicolaescu, **V. Filip**, and J. Itoh, *Focusing Properties of Volcano-Shaped Dual-Gate Field Emitters*, Japanese Journal of Applied Physics 40(1), pp. 83-86 (2001).

32. D. Nicolaescu, S. Kanemaru, **V. Filip**, and J. Itoh, *Electron Motion Three-Dimensional Confinement for Microelectronic Vacuum Gauges with Field Emitters*, Japanese Journal of Applied Physics 40(4A), pp. 2165-2172 (2001).
33. D. Nicolaescu, **V. Filip**, and J. Itoh, *Field Emitter Magnetic Sensor with Steered Focused Electron Beam*, Japanese Journal of Applied Physics, 40(4A), pp. 2173-2177 (2001).
34. **V. Filip**, D. Nicolaescu, M. Tanemura, and F. Okuyama, *Modeling the electron field emission from carbon nanotube films*, Ultramicroscopy, 89(1-3), pp. 39-49 (2001).
35. H. Sugie, M. Tanemura, **V. Filip**, K. Iwata, K. Takahashi and F. Okuyama, *Carbon nanotubes as electron source in an x-ray tube*, Applied Physics Letters 78(17), pp. 2578-2580 (2001).
36. D. Nicolaescu, **V. Filip**, and J. Itoh, *Electron Beam Focusing and Deflection Properties for Misaligned Dual Gate Field Emitters*, Japanese Journal of Applied Physics, 40(6A), pp. 3996-4001 (2001).
37. D. Nicolaescu, **V. Filip**, J. Itoh, and F. Okuyama, *Device Applied Fowler-Nordheim Relationship*, Japanese Journal of Applied Physics, 40(8), pp. 4802-4805 (2001).
38. M. Tanemura, K. Iwata, K. Takahashi, Y. Fujimoto, F. Okuyama, H. Sugie, and **V. Filip**, *Growth of aligned carbon nanotubes by plasma-enhanced chemical vapor deposition: Optimization of growth parameters*, Journal of Applied Physics 90(3), pp. 1529-1533 (2001).
39. M. Tanemura, **V. Filip**, K. Iwata, Y. Fujimoto, F. Okuyama, D. Nicolaescu and H. Sugie, *Field electron emission from carbon nanotubes grown by plasma-enhanced chemical vapor deposition*, Journal of Vacuum Science and Technology B 20(1), pp. 122-127 (2002).
40. D. Nicolaescu, **V. Filip**, S. Kanemaru, and J. Itoh, *Dual-Gate Electron Emission Structure with Nanotube-on-Emitter for X-ray Generation*, Japanese Journal of Applied Physics, 41(9), pp. 5551-5556 (2002).
41. D. Nicolaescu, S. Kanemaru, **V. Filip**, L. D. Filip, and J. Itoh, *Oscillator Ionization Vacuum Gauge with Field Emitters*, Japanese Journal of Applied Physics, 41(10), pp. 5945-5950 (2002).
42. **V. Filip**, D. Nicolaescu, M. Tanemura, and F. Okuyama, *Influence of the electronic structure on the field electron emission from carbon nanotubes*, Journal of Vacuum Science and Technology B 21(1), pp. 382-390 (2003).
43. D. Nicolaescu, **V. Filip**, S. Kanemaru, and J. Itoh, *Modeling of Field Emission Nanotriodes with Carbon Nanotubes Emitters*, Journal of Vacuum Science and Technology B 21(1), pp. 366-374 (2003).
44. D. Nicolaescu, M. Nagao, **V. Filip**, S. Kanemaru, and J. Itoh, *Model parameter extraction for nonlinear Fowler-Nordheim field emission data*, Journal of Vacuum Science and Technology B 21(4), pp. 1550-1555 (2003).
45. **V. Filip**, D. Nicolaescu, M. Tanemura, and F. Okuyama, *Sequential tunnelling model of field emission through dielectric deposits on nanotips*, Journal of Vacuum Science and Technology B 21(4), pp. 1692-1699 (2003).
46. D. Nicolaescu, T. Sato, M. Nagao, **V. Filip**, S. Kanemaru, and J. Itoh, *Characterization of enhanced field emission from HfC-coated Si emitter arrays through parameter extraction*, Journal of Vacuum Science and Technology B 22(3), pp. 1227-1233 (2004).
47. **V. Filip**, D. Nicolaescu, M. Tanemura, and F. Okuyama, *Analytical model for electron field emission from capped carbon nanotubes*, Journal of Vacuum Science and Technology B 22(3), pp. 1234-1239 (2004).
48. D. Nicolaescu, M. Nagao, T. Sato, **V. Filip**, S. Kanemaru and J. Itoh, *Emission statistics for Si and HfC/Si emitter arrays after residual gas exposure*, J. Vac. Sci. Technol. B 23(2), pp. 707-717 (2005).
49. **V. Filip**, D. Nicolaescu, H. Wong, M. Nagao, and P. L. Chu, *Field Electron Emission From Two-Dimensional Electron Gas*, J. Vac. Sci. Technol. B 23(2), pp. 657-664 (2005).
50. D. Nicolaescu, M. Nagao, **V. Filip**, S. Kanemaru and J. Itoh, *General Analytical Relationship for the Electric Field of Gated Field Emitters*, Jpn. J. Appl. Phys. 44(6A), pp. 3854-3859 (2005).
51. D. Nicolaescu, M. Nagao, T. Sato, **V. Filip**, S. Kanemaru and J. Itoh, *Emission statistics for HfC emitter arrays after residual gas exposure*, Jpn. J. Appl. Phys. 44(8), pp. 5959-5963 (2005).
52. H. Wong, **V. Filip**, and P. L. Chu, *High-efficiency light emitting device based on silicon nanostructures and tunneling carrier injection*, J. Vac. Sci. Technol. B 23(6), pp. 2449-2456 (2005).
53. **V. Filip**, Hei Wong, D. Nicolaescu, *Definition of curve fitting parameter to study tunneling and trapping of electrons in Si/ultra-thin SiO₂/metal structures*, Microelectronics Reliability 46, pp. 1027- 1034 (2006).
54. B. Sen, H. Wong, **V. Filip**, H. Y. Choi, C. K. Sarkar, M. Chan, C. W. Kok, and M. C. Poon, *Current Transport and High-Field Reliability of Aluminum/Hafnium Oxide/Silicon Structure*, Thin Solid Films 504, pp. 312-316 (2006).

55. H. Wong, B. Sen, **V. Filip**, M. C. Poon, *Material Properties of Interfacial Silicate Layer and Its Influence on the Electrical Characteristics of MOS Devices using Hafnia as the Gate Dielectric*, Thin Solid Films 504, pp. 192-196 (2006).
56. **V. Filip**, Hei Wong, D. Nicolaescu, *Quantum charge transportation in metal-oxide-Si structures with ultra-thin oxide*, Journal Vacuum Science and Technology B 24(1), pp. 38-45 (2006).
57. H. Y. Choi, H. Wong, **V. Filip**, B. Sen, C. W. Kok, M. Chan, and M. C. Poon, *Stressing effects on the charge trapping of silicon oxynitride prepared by thermal oxidation of LPCVD Si-rich silicon nitride*, Thin Solid Films 504, pp. 7-10 (2006).
58. **V. Filip**, D. Nicolaescu, and H. Wong, *Coherent and sequential tunnelling mechanisms for field electron emission through layers of wide band gap materials*, Journal Vacuum Science and Technology B, 24(2), pp. 881-886 (2006).
59. **V. Filip**, H. Wong, B. Sen, D. Nicolaescu, and C. K. Sarkar, *A double-layer current conduction model for high-k gate dielectric materials with interfacial oxide or silicate layer*, Microelectronic Engineering 83, pp 1950-1956 (2006).
60. D. Nicolaescu, M. Nagao, V. Filip, H. Tanoue, S. Kanemaru, J. Itoh, *Parameter dispersion characterization for arrays of HfC-coated emitters on poly-Si substrate*, Journal Vacuum Science and Technology B, 24(2), pp. 1045-1051 (2006).
61. Hei Wong, **V. Filip**, C. K. Wong, and P. S. Chung, *Silicon integrated photonics begins to revolutionize*, Introductory Invited Paper, Microelectronics Reliability 47, pp. 1-10 (2007).
62. D. Nicolaescu, **V. Filip**, G. H. Takaoka, Y. Gotoh, and J. Ishikawa, *Analytical modelling of the electron emission properties of carbon nanotube arrays*, J. Vac. Sci. Technol. B 25(2), pp. 472-477 (2007).
63. B. Sen, H. Wong, B. L. Yang, A. P. Huang, P. K. Chu, **V. Filip**, and C. K. Sarkar, *Nitrogen Incorporation into Hafnium Oxide Films by Plasma Immersion Ion Implantation*, Japanese Journal of Applied Physics 46(5B), pp. 3234-3238 (2007).
64. C. K. Wong, H. Wong, **V. Filip**, and P. S. Chung, *Bonding Structure of Silicon Oxynitride Grown by Plasma-Enhanced Chemical Vapor Deposition*, Japanese Journal of Applied Physics 46(5B), pp. 3202-3205 (2007).
65. D. Nicolaescu, **V. Filip**, Y. Gotoh, and J. Ishikawa, *Modeling of linear carbon nanotube nanotriodes with improved field uniformity*, J. Vac. Sci. Technol. B 26(2), pp. 806-812 (2008).
66. **V. Filip**, H. Wong, C. K. Wong, and D. Nicolaescu, *Electroluminescence of silicon nanoclusters excited by tunnelling carrier injection*, J. Vac. Sci. Technol. B 26(2), pp. 813-820 (2008).
67. J. Liu, W. S. Tam, H. Wong, and **V. Filip**, *Temperature-dependent light-emitting characteristics of InGaN/GaN diodes*, Microelectronics Reliability 49(1), pp. 38-41 (2009).
68. **V. Filip**, D. Nicolaescu and H. Wong, *Probability Current and Antiresonances of Particle Tunneling Through Biased Heterostructures*, Journal of Nanoscience and Nanotechnology 9(2), pp. 1237-1241 (2009).
69. P. Ghosh, M. Subramanian, R. A. Afre, M. Zamri, T. Soga, T. Jimbo, **V. Filip**, and M. Tanemura, *Growth of Y-junction bamboo-shaped CN_x nanotubes on GaAs substrate using single feedstock*, Applied Surface Science 255, pp. 4611-4615 (2009).
70. C. K. Wong, H. Wong, and **V. Filip**, *Photoluminescence of Silicon Nanocrystals Embedded in Silicon Oxide*, Journal of Nanoscience and Nanotechnology 9(2), pp. 1272-1276 (2009).
71. **V. Filip**, D. Nicolaescu, I. C. Fulga, T. Mitran, and Hei Wong, *Background analysis of field-induced electron emission from nanometer-scale heterostructured emitters*, J. Vac. Sci. Technol. B 27(2), pp. 711-718 (2009).
72. **V. Filip**, J. Liu, C. K. Wong, H. Wong, D. Nicolaescu, V. Barna, and E. S. Barna, *Model for trap-assisted electron tunneling in thin insulators*, J. Vac. Sci. Technol. B 28(2), pp. C2A58-C2A63 (2010).
73. W.-S. Tam, S.-L. Siu, O.-Y. Wong, C.-W. Kok, H. Wong, and **V. Filip**, *Modeling of terminal ring structures for high-voltage power MOSFETs*, Microelectronics Reliability 52, pp. 1645-1650 (2012).
74. J. Liu, H. Wong, S.-L. Siu, C.-W. Kok, and **V. Filip**, *Degradation behaviors of GaN light-emitting diodes under high-temperature and high-current stressing*, Microelectronics Reliability 52(8), pp. 1636-1639 (2012).
75. **V. Filip**, L. D. Filip, and F. Okuyama, *Miniature x-ray tubes: current state and future prospects*, Journal of Instrumentation Vol. 8(3), T03005 (2013).
76. S. N. Vajaiac, **V. Filip**, S. Stefan, and A. Boscornea, *Assessing the size distribution of droplets in a cloud chamber from light extinction data during a transient regime*, Journal of Atmospheric and Solar-Terrestrial Physics Vol. 109, pp. 29 - 36 (2014).

77. **V. Filip**, M. Bercu, and H. Wong, *Tunneling-based charge percolation transport in a random network of semi-conductive nanoclusters embedded in a dielectric matrix*, Thin Solid Films 574, pp. 84-92 (2015).
78. **V. Filip** and H. Wong, *Comparative study of resonant and sequential features in electron field emission from composite surfaces*, Thin Solid Films 608, pp. 26-33 (2016).
79. **V. Filip**, L. D. Filip, and H. Wong, *Review on peculiar issues of field emission in vacuum nanoelectronic devices*, Solid-State Electronics 138, pp. 3-15 (2017).
80. L. Du, H. Wong, S. Dong, W.-S. Lau, and **V. Filip**, *AFM study on the surface morphologies of TiN films prepared by magnetron sputtering and Al₂O₃ films prepared by atomic layer deposition*, Vacuum 153, pp. 139-144 (2018).
81. **V. Filip**, M. Enachescu, and H. Wong, *Quantum focusing and filtering of electrons propagating coherently through non-uniform potential barriers*, Thin Solid Films 660, pp. 546-557 (2018).
82. L. D. Filip and **V. Filip**, *Influence of electron quantum confinement on the strength of carbon nanotube bundles*, Solid State Electronics Letters 1, pp. 1-9 (2019).
83. C. Diac, F. I. Maxim, R. Tirca, A. Ciocanea, **V. Filip**, E. Vasile and S. N. Stamatina, *Electrochemical Recycling of Platinum Group Metals from Spent Catalytic Converters*, Metals 10, 822, pp. 1-11(2020).
84. S. N. Văjâiuc, A. Calcan, R. O. David, D.-E. Moacă, G. Iorga, T. Storelmo, V. Vulturescu, and **V. Filip**, *Post-flight analysis of detailed size distributions of warm cloud droplets, as determined in situ by cloud and aerosol spectrometers*, Atmospheric Measurement Techniques, 14, pp. 6777–6794 (2021).

VII. PUBLICATIONS AT INTERNATIONAL CONFERENCES:

1. **V. Filip**, C. Costescu, V. Anghel, (1983) *A revised calculation in Zirconium Hydride*, Proceedings: Thermal Reactor Benchmark Calculations, Techniques, Results, and Applications, Upton, New York, May 17-18, 1982, Prepared by Brookhaven National Laboratory, Upton, New York under the EPRI Project No. 975-1, February, 1983, Paper 28-1.
2. D. Nicolaescu, **V. Filip**, (1996) *Modeling of a magnetic sensor based on vacuum field emission*, 42nd International Field Emission Symposium, 1995, Madison, WI, Paper P50.
3. D. Nicolaescu, **V. Filip**, P.R. Wilshaw, (1996) *Modeling of the field emission microtriode with emitter covered with porous silicon*, 42nd International Field Emission Symposium, 1995, Madison, WI, USA, Paper P51.
4. **V. Filip**, D. Nicolaescu, C.N. Plavitu, F. Okuyama, (1997) *Analysis of microwave generation by field emitted electrons moving in crossed electric and magnetic fields*, 1st International Vacuum Electron Sources Conference, 1996, Eindhoven, The Netherlands, Paper G-37.
5. D. Nicolaescu, **V. Filip**, F. Okuyama, (1997) *Proposal for a new self focusing configuration involving porous silicon for field emission flat panel displays*, 43rd International Field Emission Symposium, Moscow, July 14-19, 1996, Technical Digest, paper P – 35.
6. D. Nicolaescu, **V. Filip**, F. Okuyama, (1997) *Analysis of a pressure sensor based on an array of collector assisted field emission triodes*, 44th International Field Emission Symposium, Tsukuba, Japan, July 1997, Technical Digest, paper P – 49.
7. D. Nicolaescu, **V. Filip**, F. Okuyama, (1998) *Study of the inverted-magnetron cold emission microelectronic vacuum gauge*, 44th International Field Emission Symposium, Tsukuba, Japan, July 1997 Technical Digest, paper P – 48.
8. **V. Filip**, D. Nicolaescu, C.N. Plavitu, F. Okuyama, (1998) *Transient and stationary field emission currents from semiconductors computed by a simple semi-classical method*, 10th International Vacuum Microelectronics Conference, August 17 - 21, 1997, Kyongju, Korea, Technical Digest, pp. 14 – 18.
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