



Web page of JP Xanthakis

Short Biography

John Xanthakis was born in Athens. He graduated from the University of Salford (BSc 1975) and obtained the MSc (1976) and PhD (1980) degrees from Imperial College, London. After completing his military service (obligatory in Greece) he returned to Imperial College as a post-doctoral fellow until 1985 when he joined the Electrical and Computer Engineering Department of NTUA as a Lecturer. In 2000 he became a Professor of Electronic Materials and Devices in the same Department. In 1992-93 he spent a sabbatical year in the Mathematics Department of Imperial College. John Xanthakis' research activity is in the areas of the electronic structure of crystalline and amorphous semiconductors, the magnetic properties of matter, field emission and the theory of tunneling, nanotechnology (carbon nanotubes in particular) and the modeling of electronic devices, GaAs devices in particular. John Xanthakis is a Senior Member of the IEEE, a member of the New York Academy of Sciences and a referee for many scientific journals e.g. Journal Of Applied Physics, Ultramicroscopy, Diamond and Related Materials, Solid State Electronics, Surface and Interface Analysis, Physica Status Solidi, Journal of Physics A, Proceedings of Royal Soc A, Materials Science in Semiconductor Processing

A list of recent publications follows

Guest Editor of

Surface and Interface Analysis Vol. 39 Issues 2-3

Book Chapters

Advances in Imaging and Electron Physics: Edited by P. Hawkes Chapter on NFESSEM.

Journal Publications (Post-2000)

- 1 . Effects of short range order on the electronic structure and optical properties of amorphous carbon
J.P.XANTHAKIS
Diamond and Related Materials 9, 1369 (2000)
- 2
Interpretation of the spin glass behaviour of diluted magnetic semiconductors below the nearest-neighbour percolation threshold via realistic Monte Carlo simulations
D. KARAOULANIS , J.P.XANTHAKIS and N.C. BACALIS
Journal of Magnetism and Magnetic Materials 222, 407 (2000).
- 3 Electronic Structure and Field Emission from amorphous carbon nitride films
J.P.XANTHAKIS
Solid State Electronics 45, 945 (2001)
- 4 . Local electric field at the emitting surface of a carbon nanotube
G.C.Kokkorakis, A.Modinos and J.P.Xanthakis
Journal of Applied Physics, Volume 91, Number 7, pages 4580-4584, 2002.
- 5 A theoretical calculation of the spatial variation of the transmission coefficient of closed carbon nanotubes
J.P.Xanthakis and G.C.Kokkorakis,
Surface and Interface Analysis, Volume 36, 391-394, 2004
- 6 . Enhancement factor of open thick-wall carbon nanotubes
G C Kokkorakis , J A Roumeliotis and J P Xanthakis,
Journal of Applied Physics, Volume 95, Number 3, pages 1468-1472, 2004.
- 7 . A modeling of the optical properties of the zinc oxide-zinc magnesium oxide double barrier system”
G.Krokidis, JP Xanthakis, and AA Iliadis
Solid State Electronics, Vol. 48, 2099-2102, 2004.
- 8 Local Electric Field and Enhancement Factor around Nanographitic structures embedded in amorphous carbon.
G. C. Kokkorakis and J.P. Xanthakis
SURFACE AND INTERFACE ANALYSIS 39 (2-3): 135-138 2007
- 9 Electronic Structure of sp² trap states in amorphous carbon.
N. Fotopoulos and J.P. Xanthakis
SURFACE AND INTERFACE ANALYSIS 39 (2-3): 132-134 2007
- 10 Forbes RG and Xanthakis JP
Field penetration into amorphous-carbon films: consequences for field-induced [electron emission](#)
SURFACE AND INTERFACE ANALYSIS 39 (2-3): 139-145 2007

- 11 A fully 2-dimensional quantum-mechanical calculation of short-channel and drain induced barrier lowering effects in HEMTs
G. KROKIDIS, J.P. XANTHAKIS and N. UZUNOGLU
Solid State Electronics 52, 625 (2008)
- 12 Angular variation of the transmission coefficient of electrons from carbon nanotubes by a 3-dimensional WKB method
J.P. XANTHAKIS, G.C. KOKKORAKIS and E. SFAKIANAKIS
Physica E (Low Dimensional Systems and Nanostructures) 40, 873 (2008)
- 13 Comment on "Model calculation for enhancement factor of a gated field emission nanotube"
J.A. ROUMELIOTIS and J.P. XANTHAKIS
J. Appl. Phys. 104 (11) 116103 (2008)
- 14 Field emission from open multiwall carbon nanotubes: A case of non-Fowler-Nordheim behavior
P.A. ZESTANAKIS and J.P. XANTHAKIS
J. Appl. Phys. 104 (9) 094312 (2008)
- 15 Three-dimensional modeling of the tunneling potential in MOS memories embedded with metal nanoparticles
M. Beniakar, A. Kladas, J.P. Xanthakis, Ch. Sargentis and D. Tsamakias
Microelectronic Engineering 86, 1856 (2009)
- 16 A molecular level model for the nucleation of a single-wall carbon nanotube cap over a transition metal catalytic particle.
N. Fotopoulos and J.P. Xanthakis
Diamond and Related Materials 19, 557 (2010)
- 17 [Self focusing of field emitted electrons at an ellipsoidal tip](#)
Kyritsakis A.; Kokkorakis G. C.; Xanthakis J. P.; et al.
Appl. Phys. Lett. 97, 2 No 023104 (2010)
- 18 Threshold Variation and Subthreshold slope variation with gate-length in $\text{Al}_2\text{O}_3/\text{InAlAs}/\text{InGaAs}$ QW FETs.
I. Tsopelas, J.P. Xanthakis and A. Gilli.
Key Engineering Materials 495, 112 (2012)
- 19 On the existence of localized states in Quantum Pillars
F. Asvesta J.P. Xanthakis and I. Tigelis
Superlattices and Microstructures 60, 596 (2013)
- 20 Fundamental aspects of near-field emission scanning electron microscopy
Zanin D.A.and Xanthakis J.P.
Advances in Imaging and Electron Physics 170 227 (2012)
- 21 Beam Spot diameter of the Near Field Scanning Electron Microscopy
A.Kyritsakis and J.P. Xanthakis

Ultramicroscopy 125, 24 (2013)

- 22 Electrical characterization of Cr Schottky contacts on undoped and Ni-doped p-ZnO films grown by pulsed laser deposition on Si (1 0 0) substrates
M. Stamataki, D. Tsamakis, J.P. Xanthakis,.....
Microelectronic Engineering 104, 95 (2013)
- 23 Scaling invariance of a diode like tunnel junction
Cabrera H., Zanin D.A, Xanthakis J.P.
Physical Review B 87, 115436 (2013)
- 24 A 3-dimensional Wentzel–Krammers–Brillouin calculation of the charging and retention times of metal nanoparticles in a dielectric matrix
Anastassopoulos A,.....J.P. Xanthakis,.....
Thin Solid Films 543, 177 (2013)
- 25 Lateral distribution of field emitted from a CNF array: a theoretical calculation
S. Siontas, A. Kyritsakis and J.P.Xanthakis
JVST B 32, 02B107 (2014)
- 26 Scaling properties of a non-Fowler-Nordheim tunneling junction
A. Kyritsakis and J.P. Xanthakis
Proc Royal Soc A 470, 20130795 (2014)
- 27 Derivation of a Generalized Fowler-Nordheim equation for emission nanoscopic field-emitters
Proc Royal Soc A January (2015)