

## List of Publications

### A) International Peer Reviewed Journals

- J.1 S. Stathopoulos, **L. Michalas**, A. Khiat, A. Serb, T. Prodromakis "An electrical characterization methodology for benchmarking memristive device technologies" **Scientific Reports** 9, 19412, 2019
- J.2 **L. Michalas**, S. Stathopoulos, A. Khiat, T. Prodromakis "An electrical characterization methodology for identifying the switching mechanism in TiO<sub>2</sub> memristive stacks" **Scientific Reports** 9, 8168, 2019
- J.3 **L. Michalas**, S. Stathopoulos, A. Khiat, T. Prodromakis "Conduction mechanisms at distinct resistive levels of Pt/TiO<sub>2-x</sub>/Pt memristors" **Applied Physics Letters** 113, 143503, 2018
- J.4 **L. Michalas**, A. Khiat, S. Stathopoulos, T. Prodromakis "Electrical characteristics of interfacial barriers at Metal – TiO<sub>2</sub> contacts" **Journal of Physics D: Applied Physics** 51, 425101, 2018
- J.5 **L. Michalas**, M. Trapatseli, S. Stathopoulos, S. Cortese, A. Khiat, T. Prodromakis "Interface asymmetry induced by symmetric electrodes on Metal-Al:TiO<sub>x</sub>-Metal structures" **IEEE Transactions on Nanotechnology** 17 (5), 867-872, 2018
- J.6 M. Koutsourelis, **L. Michalas**, E. Papandreou, G. Papaioannou "Dielectric charging asymmetry in SiN films used in RF MEMS capacitive switches" **IEEE Transactions on Device and Materials Reliability** 17 (1), 138-145, 2017
- J.7 M. Koutsourelis, S. Xavier, **L. Michalas**, C. Lioutas, S. Bansropun, G. Papaioannou, A. Ziaei "Electrical properties of nanostructured SiN films for MEMS capacitive switches" **Journal of Microelectromechanics and Microengineering** 27, 014001, 2017
- J.8 M. Koutsourelis, A. Zevgolatis, S. Saada, C. Mer-Calfati, **L. Michalas**, G. Papaioannou, P. Bergonzo "Dielectric charging phenomena in diamond films used in RF MEMS capacitive switches: The effect of film thickness" **Microelectronics Reliability** 64, 660-664, 2016
- J.9 M. Koutsourelis, D. Birmpiliotis, **L. Michalas**, G. Papaioannou "An in depth analysis of pull-up capacitance-voltage characteristics for dielectric charging assessment of MEMS capacitive switches" **Microelectronics Reliability** 64, 688-692, 2016
- J.10 **L. Michalas**, E. Brinciotti, A. Lucibello, G. Gramse, C.H. Joseph, F. Kienberger, E. Proietti, R. Marcelli "De-embedding techniques for nanoscale characterization of semiconductors by scanning microwave microscopy" **Microelectron Engineering** 159, 64-69, 2016
- J.11 **L. Michalas**, F. Wang, C. Brillard, N. Chevalier, J.M Hartmann, R. Marcelli, D. Theron "Modeling and de-embedding the interferometric scanning microwave microscopy by means of dopant profile calibration" **Applied Physics Letters** 107, 223102, 2015
- J.12 **L. Michalas**, M. Koutsourelis, E. Papandreou, F. Giacomozzi, G. Papaioannou "Dielectric charging effects in floating electrode MEMS capacitive switches" **Microelectronics Reliability** 55, 1891-1895, 2015
- J.13 M. Koutsourelis, **L. Michalas**, E. Papandreou, G. Papaioannou "Induced charging phenomena on SiN<sub>x</sub> dielectric films used in RF MEMS capacitive switches" **Microelectronics Reliability** 55, 1911-1915, 2015
- J.14 **L. Michalas**, M. Koutsourelis, E. Papandreou, A. Gantis, G. Papaioannou "A MIM capacitor study of dielectric charging for RF MEMS capacitive switches" **Facta Universitatis, series: Electronics and Energetics** 28, No 1, 113-122, 2015
- J.15 **L. Michalas**, M. Koutsourelis, S. Saada, C. Mer-Calfati, A. Leuliet, P. Martins, S. Bansropun, G. Papaioannou, P. Bergonzo, A. Ziaei "Electrical assessment of diamond MIM capacitors and modeling of MEMS capacitive switch discharging" **Journal of Microelectromechanics and Microengineering** 24 (11), 115017, 2014
- J.16 M. Koutsourelis, **L. Michalas**, A. Gantis, G. Papaioannou "A study of deposition conditions on charging properties of PECVD silicon nitride films for MEMS capacitive switches" **Microelectronics Reliability** 54, 2159 – 2163, 2014
- J.17 M. Koutsourelis, A. Adikimenakis, **L. Michalas**, G. Stavrinidis, G. Konstantinidis, A. Georgakilas, G. Papaioannou "Comparative study of AlN films' electrical properties for MEMS capacitive switches" **Microelectron Engineering** 130, 69-73, 2014
- J.18 **L. Michalas**, M. Koutsourelis, G. Papaioannou "Probing contactless injection dielectric charging in RF MEMS capacitive switches" **Electronics Letters** 50 (10), 766-768, 2014
- J.19 C. Jegou, **L. Michalas**, T. Maroutian, G. Agnus, M. Koutsourelis, G. Papaioannou, L. Largeau, D. Troadec, A. Leuliet, P. Aubert, Ph. Lecoer "Temperature dependence of the conduction mechanism through a Pb(Zr,Ti)O<sub>3</sub> thin film" **Thin Solid Films** 563, 32-35, 2014
- J.20 M. Koutsourelis, **L. Michalas**, P. Martins, E. Papandreou, A. Leuliet, S. Bansropun, G. Papaioannou, A. Ziaei "Properties of contactless and contacting charging in MEMS capacitive switches" **Microelectronics Reliability** 53, 1655 – 1658, 2013
- J.21 M. Koutsourelis, **L. Michalas**, G. Papaioannou "Assessment of dielectric charging in micro-electro-mechanical capacitive switches" **Facta Universitatis, series: Electronics and Energetics** 26, No 3, 239-245, 2013 (Invited Paper)
- J.22 I. Kostis, **L. Michalas**, M. Vasilopoulou, N. Konofaos, G. Papaioannou, A.A. Iliadis, S. Kennou, K. Giannakopoulos, G. Papadimitropoulos and D. Davazoglou "Hot – wire substoichiometric tungsten oxide films deposited in hydrogen environment with n – type conductivity" **Journal of Physics D: Applied Physics** 45, 445101, 2012
- J.23 **L. Michalas**, A. Garg, A. Vennkatraman, M. Koutsourelis, A. Alexeenko, D. Peroulis, G. Papaioannou "A study of field emission process in electrostatically actuated MEMS switches" **Microelectronics Reliability** 52, 2267-2271, 2012
- J.24 M. Koutsourelis, **L. Michalas**, G. Papaioannou "Temperature effects on the bulk discharge current of dielectric film of MEMS capacitive switches", **Microelectronics Reliability** 52, 2240-2244, 2012
- J.25 **L. Michalas**, A. Syntychaki, M. Koutsourelis, G. Papaioannou, A. Voutsas "A temperature study of photosensitivity in SLS polycrystalline silicon TFTs" **Microelectronics Reliability** 52, 2508-2511, 2012
- J.26 **L. Michalas**, M. Koutsourelis, G.J. Papaioannou, D.N. Kouvatso, A.T. Voutsas "Hydrogen passivation on Sequential Lateral Solidified poly-Si TFTs", **Microelectron Engineering** 90, 72- 75, 2012

- J.27 M. Koutsourelis, E. Papandreou, **L. Michalas**, G.J. Papaioannou "Investigation of silicon nitride charging" **Microelectronics Engineering** 90, 145- 148, 2012
- J.28 **L. Michalas**, G.J. Papaioannou, A.T. Voutsas "Degradation of polycrystalline silicon TFTs due to alpha particles irradiation stress" **Microelectronics Reliability** 50, 1848-1851, 2010
- J.29 **L. Michalas**, G.J. Papaioannou, D.N. Kouvatso, A.T. Voutsas "Back gate influence on front channel operation of p-channel double gate polysilicon TFTs" **Thin Solid Films** 517, 6364-6366, 2009
- J.30 **L. Michalas**, G.J. Papaioannou, D.N. Kouvatso, F.V. Farmakis, A.T. Voutsas "Characterization of Thin Film Transistors fabricated on different Sequential Lateral Solidified poly-silicon substrates" **Microelectronic Engineering** 85, 976-978, 2008
- J.31 **L. Michalas**, G.J. Papaioannou, D.N. Kouvatso, A.T. Voutsas "Investigation of the undershoot effect in polycrystalline silicon thin film transistors" **Solid State Electronics** 52, 394-399, 2008
- J.32 **L. Michalas**, G.J. Papaioannou, D.N. Kouvatso, A.T. Voutsas "Role of band gap states on the electrical behaviour of sequential lateral solidified polycrystalline silicon TFTs" **Journal of the Electrochemical Society** 155 (1), H1-H6, 2008
- J.33 **L. Michalas**, G.J. Papaioannou, D.N. Kouvatso, A.T. Voutsas "An experimental study of band gap states electrical properties in poly-Si TFTs by the analysis of the transient currents" **Physica Status Solidi (c)** 5, 12, 3613-3616, 2008
- J.34 **L. Michalas**, M. Exarchos, G. J. Papaioannou, D. N. Kouvatso, A.T. Voutsas "An experimental study of the thermally activated processes in polycrystalline silicon thin film transistors" **Microelectronics Reliability** 47, 2058-2064, 2007
- J.35 D.N. Kouvatso, A.T. Voutsas, **L. Michalas**, F.V. Farmakis, G.J. Papaioannou "Device degradation behaviour and polysilicon film morphology of thin film transistors fabricated using advanced excimer laser lateral solidification techniques" **Thin Solid Films** 515, 7413-7416, 2007
- J.36 A.T. Voutsas , D.N. Kouvatso, **L. Michalas** and G.J. Papaioannou, "Effect of Silicon Thickness on the Degradation Mechanisms of Sequential-Laterally-Solidified Polycrystalline Silicon Thin-Film-Transistors During Hot-Carrier Stress" **IEEE Electron Device Letters**, Vol. 26, No3,181-184, 2005
- J.37 D.N. Kouvatso, V. Davidovic, G.J. Papaioannou, N. Stojadinovic, **L. Michalas**, M. Exarchos, A.T. Voutsas and D. Goustouridis, "Effects of hot carrier and irradiation stresses on advanced excimer laser annealed polycrystalline silicon thin film transistors", **Microelectronics Reliability** 44, 1631-1636, 2004

## B) Reviewed Conference Proceeding

- CP.1 G. Papandroulidakis, **L. Michalas**, A. Serb, A. Khiat, G. Merrett, T. Prodromakis "A digital in-analogue out logic gate based on metal-oxide memristor devices" **IEEE Proceedings** of ISCAS 2019, International Symposium on Circuits and Systems, 26-29 May, Sapporo, Japan
- CP.2 G. Papandroulidakis, A. Khiat, A. Serb, S. Stathopoulos, **L. Michalas**, T. Prodromakis "Metal Oxide-Enabled Reconfigurable Memristive Threshold Logic Gates" **IEEE Proceedings** of ISCAS 2018, International Symposium on Circuits and Systems, 27-30 May, Florence, Italy
- CP.3 T. Abbey, A. Serb, N. Vasilakis, **L. Michalas**, A. Khiat, S. Stathopoulos, T. Prodromakis "An Embedded Environmental Control Micro-Chamber System for RRAM Memristor Characterisation" **IEEE Proceedings** of ISCAS 2018, International Symposium on Circuits and Systems, 27-30 May, Florence, Italy
- CP.4 T. Abbey, A. Serb, N. Vasilakis, **L. Michalas**, A. Khiat, S. Stathopoulos, T. Prodromakis "Live Demonstration: An Embedded Environmental Control Micro-Chamber System for RRAM Memristor Characterisation" **IEEE Proceedings** of ISCAS 2018, International Symposium on Circuits and Systems, 27-30 May, Florence, Italy
- CP.5 R. Marcelli, A. Lucibello, G. Capoccia, E. Proietti, G.M. Sardi, C.H. Joseph, **L. Michalas**, G. Bartolucci, F. Kienberger, G. Gramse, M. Kasper "Near field microwave techniques for micro- and nano- scale characterization in materials science" (**Invited Paper**), to appear in **IEEE Proceedings** of CAS 2017, 40<sup>th</sup> International Semiconductor Conference, 11-14 October 2017, Sinaia, Romania
- CP.6 M. Koutsourelis, D. Birbiliotis, **L. Michalas**, G. Papaioannou "Dielectric charging in MEMS capacitive switches: A persisting reliability issue, available models and assessment methods" **IEEE Proceedings** of 2016 Mediterranean Microwave Symposium (MMS), pp. 1-4, November 14-16, Abu Dhabi, United Arab Emirates
- CP.7 **L. Michalas**, I. Ionica, E. Brinciotti, L. Pirro, F. Kienberger, S. Cristoloveanu, R. Marcelli "Scanning microwave microscopy for non-destructive characterization of SOI wafers" **IEEE Proceedings** of EUROSUI – ULIS 2016, pp. 238 – 241, 2016 Joint international EUROSUI workshop and international conference on Ultimate Integration in Silicon (ULIS), January 25-27, Vienna , Austria
- CP.8 M. Koutsourelis, **L. Michalas**, E. Papandreou, G. Papaioannou, "Asymmetric dielectric charging phenomena on SiN films used in RF MEMS capacitive switches" **IEEE Proceedings**. APMC 2015, 3, 1-3, Asian Pacific Microwave Conference, December 6-9, Nanjing, China
- CP.9 **L. Michalas**, A. Lucibello, G. Badino, C.H. Joseph, E. Brinciotti, F. Kienberger, E. Proietti, R. Marcelli "Scanning Microwave Microscopy for nanoscale characterization of semiconductors: De-embedding reflection contact mode measurements" **IEEE Proceedings** of EUMW2015, pp. 159-162, 2015 European Microwave Week, 6-11 September 2015, Paris, France
- CP.10 P. Giouanlis, E. Blokhina, O. Feely, **L. Michalas**, M. Koutsourelis, G. Papaioannou "Modeling of the dynamic behavior of floating electrode MEMS" **IEEE Proceedings** of ISCAS 2015, pp. 1322-1325, International Symposium on Circuits and Systems, May 24-27, Lisbon, Portugal
- CP.11 **L. Michalas**, A. Lucibello, C.H. Joseph, E. Brinciotti, F. Kienberger, E. Proietti, R. Marcelli "Nanoscale characterization of MOS systems by microwaves: Dopant profiling calibration" **IEEE Proceedings** of EUROSUI-ULIS 2015, pp. 269-272, 2015 Joint international EUROSUI workshop and international conference on Ultimate Integration in Silicon (ULIS), January 26-28, Bologna, Italy

- CP.12 **L. Michalas**, S. Xavier, M. Koutsourelis, O. El. Jouiadis, S. Bansropun, G. Papaioannou, A.Ziaei “Gold nanorod array structured silicon nitride for MEMS capacitive switches” **IEEE Proceedings** of SiRF 2015 pp. 89-91, 15<sup>th</sup> Topical meeting on silicon monolithic integrated circuits in RF systems, 26-28 January 2015, San Diego, CA, USA
- CP.13 **L. Michalas**, M. Koutsourelis, E. Papandreou, A. Gantis, G. Papaioannou “Assessment of dielectric charging in RF MEMS capacitive switches with the aid of MIM capacitors” **IEEE Proceedings** of MIEL 2014, pp. 125-128, 29<sup>th</sup> international conference on Microelectronics, 12-14 May 2014, Belgrade, Serbia
- CP.14 G. Papaioannou, **L. Michalas**, M. Koutsourelis, S. Bansropun, A. Gantis, A. Ziaei “Charging mechanisms in nanostructured dielectrics for MEMS capacitive switches” **IEEE Proceedings** of SiRF 2014 pp. 98 – 100, 14<sup>th</sup> Topical meeting on silicon monolithic integrated circuits in RF systems, 20-22 January 2014, Newport Beach, CA, USA
- CP.15 **L. Michalas**, S. Saada, M.Koutsourelis, C. Mer, A. Leuliet, P. Martins, S. Bansropun, G. Papaioannou, P. Bergonzo, A. Ziaei “ Reliability of nanocrystalline diamond MEMS capacitive switches” **IEEE Proceedings** of EuMW-EuMIC 2013, pp. 1335 – 1338, 2013 European Microwave Week, 6-11 October, Nuremberg, Germany
- CP.16 **L. Michalas**, S. Saada, M.Koutsourelis, C. Mer, A. Leuliet, E. Papandreou, P. Martins, S. Bansropun, G. Papaioannou, R. Hugon, P. Bergonzo, A. Ziaei “Electrical characterization of undoped diamond films for RF MEMS application” **IEEE Proceedings** of IRPS 2013, 6B 3.1 – 6B 3.7, IEEE International Reliability Physics Symposium, 14-18 April 2013, Monterey, California, USA
- CP.17 **L. Michalas**, F. Giacomozzi, M. Koutsourelis, E. Papandreou, S. Colpo, B. Margesin, G. Papaioannou “Electrical characteristics of floating electrode MEMS capacitive switches” **IEEE Proceedings** of EuMW-EuMIC 2012, pp. 36-39, 2012 European Microwave Week, 28 October – 2 November 2012, Amsterdam, The Netherlands
- CP.18 **L. Michalas**, G. Stavrinidis, M. Koutsourelis, G. Konstantinidis, G. Papaioannou “Dielectric less and dimple less MEMS capacitive switches: The actuation mechanism” **IEEE Proceedings** of EuMW-EuMIC 2012, pp. 445 - 448, 2012 European Microwave Week, 28 October – 2 November 2012, Amsterdam, The Netherlands
- CP.19 M. Koutsourelis, A. Adikimenakis, **L. Michalas**, E. Papandreou, A. Pantazis, G. Konstantinidis, A. Georgakilas and G. Papaioannou “Charging and discharging processes in AlN dielectric films deposited by plasma assisted molecular beam epitaxy” **IEEE Proceedings** of CAS 2012, Vol. 2, pp. 281-284, 35<sup>st</sup> International Semiconductor Conference, 15-17 October 2012, Sinaia, Romania
- CP.20 A. Leuliet, N. Jamond, R. Bisaro, G. Garry, M. Pham – Thi, A. Ziaei, **L. Michalas**, M. Koutsourelis, G. Papaioannou “Fabrication and electrical properties of 0.9PMN-0.1PT MIM Capacitors” **IEEE Proceedings** of ISAF 2012, pp. 1-4, International Symposium on Applications of Ferroelectrics, 9 -13 July 2012, Aveiro, Portugal
- CP.21 M. Koutsourelis, **L. Michalas**, G.J. Papaioannou “Charge collection mechanism in MEMS capacitive switches” **IEEE Proceedings** of IRPS 2012, ME 2.1 – ME 2.5, IEEE International Reliability Physics Symposium, 15-19 April 2012, Anaheim, California, USA
- CP.22 M.Koutsourelis, **L. Michalas**, G.J. Papaioannou “Advanced dielectric charging characterization in capacitive MEMS”, **IEEE Proceedings** of ICIT 2012, pp. 545-550, IEEE International Conference on Industrial Technology, 19-21 March 2012, Athens, Greece
- CP.23 M. Koutsourelis, **L. Michalas**, G.J. Papaioannou “The effect of temperature on dielectric charging of capacitive MEMS” **IEEE Proceedings** of IRPS 2011, 3D 4.1 – 3D 4.7, IEEE International Reliability Physics Symposium, 10-14 April 2011, Monterey, California, USA
- CP.24 **L. Michalas**, G.J. Papaioannou, A.T Voutsas “Effects of  $\alpha$ -particles irradiation on polycrystalline silicon thin film transistors” **IEEE Proceedings** of CAS 2008, Vol. 2, pp. 301-304 31<sup>st</sup> International Semiconductor Conference, 13-15 October 2008, Sinaia, Romania
- CP.25 **L. Michalas**, G.J. Papaioannou, A.T Voutsas “A DLTS study of band gap states in sIs poly-Si TFTs”, **ECS Transactions** Vol. 16, Is. 9, pp.79-84, 214<sup>th</sup> ECS Meeting, 12-17/10/2008, Honolulu, Hawaii, USA
- CP.26 **L. Michalas**, G.J. Papaioannou, D.N. Kouvatsos, A.T. Voutsas, “The Role of Grain Boundaries on the Performance of Poly-Si TFTs”, **ECS Transactions** Vol. 3 is. 8, pp. 87-92, 210<sup>th</sup> ECS Meeting, 29/10 – 3/11/2006, Cancun, Mexico
- CP.27 **L. Michalas**, G.J. Papaioannou, D.N. Kouvatsos, A.T. Voutsas, “Temperature Analysis of Poly-Si TFTs Transfer Characteristics”, **IEEE Proceedings** of CAS 2006, Vol. 2, pp. 323-326, 29<sup>th</sup> International Semiconductor Conference, 27-29 September 2006, Sinaia, Romania. **(Best Student Paper Award)**
- CP.28 **L. Michalas**, M. Exarchos, G.J. Papaioannou, D.N. Kouvatsos, A.T. Voutsas, “Physics and Electrical Characterization of Excimer Laser Crystallized Polysilicon TFTs”, **IEEE Proceedings** of Miel 2006, Vol. 2, pp. 597-600, 25<sup>th</sup> International Conference on Microelectronics, 14-17 May 2006, Belgrade, Serbia & Montenegro
- CP.29 D.N. Kouvatsos, G.J. Papaioannou, M. Exarchos, **L. Michalas**, A.T. Voutsas., “Effect of Hot Carrier Stress on the Performance, Trap Densities and Transient Behavior of SLS-ELA TFTs” **IEEE Proceedings** of ESSDERC 2005, pp 395-398, 35<sup>th</sup> European Solid-State Device Research Conference, 12 -16 September 2005 Grenoble, France
- CP.30 D.N. Kouvatsos, **L. Michalas**, A.T. Voutsas and G.J. Papaioannou, “Effects of DC gate and drain bias stresses on the degradation of excimer laser crystallized polysilicon thin film transistors”, **IOP Journal of Physics: (Conference Series)** 10 (2005), 45-48., MMN 2004, Second Conference on Microelectronics Microsystems and Nanotechnology, 14 -17 November 2004, Athens, Greece
- CP.31 M. Exarchos, D.N. Kouvatsos, G.J. Papaioannou, V. Davidovic, N. Stojadinovic, **L. Michalas**, A.T. Voutsas, “Characterization of Advanced Excimer Laser Crystallized Polysilicon Thin Film Transistors”, **IEEE Proceedings** of Miel 2004, pp. 697-700, Vol. 2, 24<sup>th</sup> International Conference on Microelectronics, 16-19 May 2004, Nis, Serbia