

**List of publication**  
**Athanasios Kostopoulos**

**1. Multimodal microscopy test standard for scanning microwave, electron, force and optical microscopy**

Haenssler O.C., Wieghaus M.F., Kostopoulos A., Doundoulakis G., Aperathitis E., Fatikow S., Kiriakidis G.

**Journal of Micro-Bio Robotics** Volume 14, Issue 3-4, 1 December 2018, Pages 51-57

**DOI:** 10.1007/s12213-018-0108-z

**2. GaN Membrane Supported SAW Pressure Sensors with Embedded Temperature Sensing Capability**

Muller, A.<sup>a</sup> Konstantinidis, G., Giangu, I., Adam, G.C., Stefanescu, A., Stavrinidis, A.<sup>b</sup>, Stavrinidis, G.<sup>b</sup>, Kostopoulos A.,<sup>b</sup> Boldeiu, G.<sup>a</sup>, Dinescu, A.<sup>a</sup>

**IEEE Sensors Journal** Volume 17, Issue 22, 15 November 2017, Article number 8052477, Pages 7383-7393

**DOI:** 10.1109/JSEN.2017.2757770

**3. Test standard for light, electron & microwave microscopy to enable robotic processes (Conference Paper)**

Haenssler, O.C., Kostopoulos, A., Doundoulakis, G., Aperathitis, E., Fatikow, S., Kiriakidis, G.

**International Conference on Manipulation, Automation and Robotics at Small Scales, MARSS 2017** – Proceedings 3 August 2017, Article number 80019071<sup>st</sup> International Conference on Manipulation, Automation and Robotics at Small Scales, MARSS 2017; Montreal; Canada; 17 July 2017 through 21 July 2017; Category number CFP17D58-ART; Code 129786

**DOI:** 10.1109/MARSS.2017.8001907

**4. Investigation of thin InN/GaN heterostructures with in situ SiN<sub>x</sub> dielectric grown by plasma-assisted molecular beam epitaxy**

Zervos C, Adikimenakis A, Beleniotis P, Kostopoulos, A., Androulidaki M, Tsagaraki K, Kayambaki M, Konstantinidis G, Georgakilas, A.

**Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics** Volume 35, Issue 2, 1 March 2017, Article number 021210

**DOI:** 10.1116/1.4977606

**5. “Effect of rapid thermal annealing on polycrystalline InGaN thin films deposited on fused silica substrate”**

S.A. Kazazis, E. Papadomanolaki, M. Androulidaki, K. Tsagaraki, A. Kostopoulos, E. Aperathitis, E. Iliopoulos

**Thin Solid Films** 611 (2016) 46–51,

**DOI:** 10.1016/j.tsf.2016.04.045

**6. “In-situ SiN<sub>x</sub>/InN structures for InN channel transistors”**,

Ch. Zervos, A. Adikimenakis, P. Beleniotis, A. Kostopoulos, K. Tsagaraki, M. Kayambaki, G. Konstantinidis, and A. Georgakilas,

**Appl. Phys. Lett.** Volume 108, Issue 14, 142102, 5 April 2016

**DOI:** 10.1063/1.4945668

**7. “Analysis of current instabilities of thin AlN/GaN/AlN double heterostructure high electron mobility transistors”**,

Ch. Zervos, A. Adikimenakis, A. Bairamis, A. Kostopoulos, M. Kayambaki, K. Tsagaraki, G. Konstantinidis, and A. Georgakilas,

**Semiconductor Science and Technology**, 31, 065002, 5 April 2016

DOI: 10.1088/0268-1242/31/6/065002

**8. Electron density and currents of AlN/GaN high electron mobility transistors with thin GaN/AlN buffer layer.**

Bairamis A., Zervos C., Adikimenakis A., Kostopoulos, A., Kayambaki, M., Tsagaraki, K., Konstantinidis, G., Georgakilas, A.

*Applied Physics Letters*, Volume 105, Issue 11, 15 September 2014, Article number 113508

DOI: 10.1063/1.4896026

**9. AlN/GaN/AlN double heterostructures with thin AlN top barriers**

Zervos, Ch., Bairamis, A., Adikimenakis, A., Kostopoulos, A., Kayambaki, M., Tsagaraki, K., Konstantinidis G, Georgakilas, A.

10th International Conference on Advanced Semiconductor Devices and Microsystems, 24 December 2014, Article number 6998659, Pages 113-116, ASDAM

DOI: 10.1109/ASDAM.2014.6998659

**10. Graphene-like metal-on-silicon field-effect transistor**

Dragoman, M., Konstantinidis, G., Tsagaraki, K., Kostopoulos, T., Dragoman, D., Neculoiu, D. Neculoiu

*Nanotechnology* 23 (30) , art. no. 305201 (2012)

DOI: 10.1088/0957-4484/23/30/305201

**11. ZnO-based diodes fabricated from a single sputtering target**

V. Kampylafka, K. Tsagaraki, M. Androulidaki, A. Kostopoulos, M. Kayambaki, M. Modreanu, G. Kiriakidis, E. Aperathitis,

Presented at the European Materials Research Society, E-MRS 2012 Spring Meeting, Symposium: Q Novel materials and fabrication methods for new emerging devices, Strasbourg, May 14-18, 2012.

DOI: 10.1109/SMICND.2011.6095792

**12. Zinc Nitride based Optoelectronic Devices**

V. Kambilafka, M. Kayambaki, A. Kostopoulos, M. Androulidaki, K. Tsagaraki, M. Modreanu, G. Kiriakidis and E. Aperathitis,

4<sup>th</sup> International Symposium on Transparent Conductive Materials (TCM 2012), 21 – 25 October, 2012, Creta Maris Hotel, Hersonissos, Crete, Greece.

**13. “The effect of power on rf sputtered nitrogen- doped ZnO thin films”**,

V. Kambilafka, M. Androulidaki, A. Kostopoulos, K. Tsagaraki, G. Kiriakidis, and E. Aperathitis,

4<sup>th</sup> International Symposium on Transparent Conductive Materials (TCM 2012), 21 – 25 October, 2012, Creta Maris Hotel, Hersonissos, Crete, Greece.

**14. ZnO thin films formed from ZnN target by RF sputtering: From materials to devices**

Kampylafka, V., Kostopoulos, A., Androulidaki, M., Tsagaraki, K., Modreanu, M., Aperathitis, E.

**Proceedings of the International Semiconductor Conference, CAS** Volume 2, 2011, Article number 6095792, Pages 279-282, 34<sup>th</sup> International Semiconductor Conference, CAS 2011, Sinaia 17 October 2011 - 19 October 2011

DOI: 10.1109/smicnd.2011.6095792

**15. Transparent p/n diode device from a single zinc nitride sputtering target**

Kambilafka, V., Kostopoulos, A., Androulidaki, M., Tsagaraki, K., Modreanu, M., Aperathitis, E

**Thin Solid Films** Volume 520, Issue 4, 1 December 2011, Pages 1202-1206

DOI: 10.1016/j.tsf.2011.06.072

**16. Bragg polariton luminescence from a GaN membrane embedded in all dielectric microcavity**

Trichas, E., Pelekanos, N.T., Iliopoulos, E., Monroy, E., Tsagaraki, K., Kostopoulos, A., Savvidis, P.G.

**Applied Physics Letters** Volume 98, Issue 22, 30 May 2011, Article number 221101

**DOI:** 10.1063/1.3595481

### **17. MEMS switch for 60 GHz band**

Vasilache, D., Constantinidis, G., Dragoman, M., Takacs, A., Vladoianu, F., Kostopoulos, T., Boldeiu, G., Moagar, V., Tibeica, C., Bary, L., Plana, R.

**Proceedings of SPIE - The International Society for Optical Engineering** Volume 7821, 2010, Article number 782100 *Advanced Topics in Optoelectronics, Microelectronics, and Nanotechnologies V*; Constanta 26-19 August 2010, Code83561

### **18. High electron mobility transistors based on the AlN/GaN heterojunction**

Adikimenakis, A., Aretouli, K.E., Iliopoulos, E., Kostopoulos, A., Tsagaraki, K., Konstantinidis, G., Georgakilas, A.

**Microelectronic Engineering** 86 (2009) 1071-1073

**DOI:** 10.1016/j.mee.2009.02.004

### **19. GaN membrane-supported UV photodetector manufactured using nanolithographic processes**

A. Mueller, G. Konstantinidis, G., M. Dragoman, D. Neculoiu, A. Dinescu, M. Androulidaki, M. Kayambaki, A. Stavriniadis, D. Vasilache, C. Buiculescu, I. Petrini, A. Kostopoulos, D. Dascalu

**Microelectronic Journal** 40 (2009) pp. 319-321

**DOI:** 10.1016/j.mejo.2008.07.021

### **20. Rf nems based on carbon nanotubes and graphene (Conference Paper)**

Dragoman, M., Konstantinidis, G., Dragoman, D., Neculoiu, D., Cismaru, A., Coccetti, F., Plana, R., Harnagel, H., Kostopoulos, A., Buiculescu, R.

**Proceedings of the International Semiconductor Conference, CAS** Volume 1, 2008, Article number 4703339, Pages 103-106 2008 International Semiconductor Conference, CAS 2008; Sinaia; Romania; 13 October 2008 through 15 October 2008; Category number CFP08CAS-PRT; Code 77492

**DOI:** 10.1109/SMICND.2008.4703339

### **21. Ultraviolet MSM photodetector based on GaN micromachining**

Müller, A., Konstantinidis, G., Dragoman, M., Neculoiu, D., Dinescu, A., Androulidaki, M., Kayambaki, M., Stavriniadis, A., Vasilache, D., Buiculescu, C., Petrini, I., Anton, C., Dascalu, D., Kostopoulos, A.

**Proceedings of the International Semiconductor Conference, CAS**

Volume 1, 2008, Article number 4703336, Pages 91-94 2008 International Semiconductor Conference, CAS 2008; Sinaia; Romania; 13 October 2008 through 15 October 2008; Category number CFP08CAS-PRT; Code 77492

**DOI:** 10.1109/SMICND.2008.4703336

### **22. Negative index short-slab pair and continuous wires metamaterials in the far infrared regime**

Gundogdu, T. F., Katsarakis, N., Kafesaki, M., Penciu, R. S., Konstantinidis, G., Kostopoulos, A., Economou, E. N., Soukoulis, C. M.

**Optics Express** Vol. 16, issue: 12 pp. 9173-9180, June 9 2008

**DOI:** 10.1364/OE.16.009173

### **23. Multiple negative resistances in trenched structures bridged with carbon nanotubes**

Dragoman, M., Konstantinidis, G., Kostopoulos, A., Dragoman, D., Neculoiu, D., Buiculescu, R., Plana, R., Coccetti, F., Hartnagel, H.

**Applied Physics Letters** Volume: 93, Issue: 4, Article Number: 043117, JUL 28 2008

DOI: 10.1063/1.2963367

**24. Metallic bonding methodology for heterogeneous integration of optoelectronic dies to CMOS circuits**

Robogiannakis P., Kyriakis-Bitaros, E. D., Minogiou K., Katsafouros S., Kostopoulos A., Konstantinidis G., Halkias, G.

**Microelectronic Engineering**, Vol:85, Is:4, pp: 727-732, APR 2008

DOI: 10.1016/j.mee.2008.01.053

**25. GaN membrane metal-semiconductor-metal ultraviolet photodetector**

Muller, A., Konstantinidis, G., Dragoman, M., Neculoiu, D., Kostopoulos, A., Androulidaki, M., Kayambaki, M., Vasilache, D.

**Applied Optics**, Volume: 47, Issue: 10, Pages: 1453-1456, APR 1 2008

DOI: 10.1364/AO.47.001453

**26. Gate-lag and drain-lag effects in (GaN)/InAlN/GaN and InAlN/AlN/GaN HEMTs**

J. Kuzmik, J.-F. Carlin, M. Gonschorek, A. Kostopoulos, G. Konstantinidis, G. Pozzovivo, S. Golka, A. Georgakilas, N. Grandjean, G. Strasser and D. Pogany

**phys. stat. sol. (a)** 204, No. 6, 2019–2022 (2007)

DOI: 10.1002/pssa.200674707

**27. Microwave FBAR structures fabricated using micromachined GaN membranes**

Neculoiu, D., Konstantinidis, G., Müller, A., Kostopoulos, A., Vasilache, D., Mutamba, K., Sydlo, C., Hartnagel, H.L., Bary, L., Plana, R.

**IEEE MTT-S International Microwave Symposium, IMS 2007**; Honolulu, HI; United States; 3 June 2007 through 8 June 2007; Category number 07CH37842C; Code 70323, Article number 4263961, Pages 877-880

DOI: 10.1109/MWSYM.2007.380119

**28. Membrane supported AlN FBAR structures obtained by micromachining of high resistivity silicon**

Neculoiu, D., Vasilache, D., Konstantinidis, G., Morosanu, C., Stavrinidis, A., Kostopoulos, A., Cismaru, A., Buiculescu, C., Petrini, I., Müller, A.

2007 International Semiconductor Conference, CAS 2007; Sinaia; Romania; 15 October 2007 through 17 October 2007; Category number 07TH8934; Code 72877, Volume 1, 2007, Article number 4519705, Pages 293-296

DOI: 10.1109/SMICND.2007.4519705

**29. GaN membrane MSM ultraviolet photodetectors**

Muller, A., Konstantinidis, G., Kostopoulos, A., Dragoman, M., Neculoiu, D., Androulidaki, M., Kayambaki, M., Vasilache, D., Buiculescu, C., Petrini, I.

**Proceedings of SPIE - The International Society for Optical Engineering**, Volume 6415, 2007, Article number 641509, Micro- and Nanotechnology: Materials, Processes, Packaging, and Systems III; Adelaide; Australia; 11 December 2006 through 13 December 2006; Code 69479

DOI: 10.1117/12.695086

**30. Growth Optimization of an Electron Confining InN/GaN Quantum Well Heterostructure**

E. Dimakis, E. Iliopoulos, M. Kayambaki, K. Tsagaraki, A. Kostopoulos, G. Konstantinidis and A. Georgakilas

**Journal of Electronic Materials**, Volume 36, Number 4, April, 2007, pp 373-378

DOI: 10.1007/s11664-006-0041-0

**31. Heterogeneous integration technique of optoelectronic dies to CMOS circuits via metallic bonding (Conference Paper)**

Robogiannakis, P., Kyriakis-Bitzaros, E.D., Minoglou, K., Katsafouros, S., Kostopoulos, A., Konstantinidis, G., Halkias, G.

**ESTC 2006** - 1st Electronics Systemintegration Technology Conference Volume 1, 2007, Article number 4060744, Pages 328-333 ESTC 2006 - 1st Electronics Systemintegration Technology Conference; Dresden, Saxony; Germany; 5 September 2006 through 7 September 2006; Category number 06EX1494; Code 71926

**DOI:** 10.1109/ESTC.2006.280020

### **32. 60 GHz band RF mems switch**

Vasilache, D., Dragoman, M., Constantinidis, G., Psychias, Y., Vladoianu, F., Kostopoulos, T., Tibeica, C., Bary, L., Cismaru, A., Neculoiu, D., Buiculescu, C., Petrini, I., Plana, R., Müller, A.  
**2006 International Semiconductor Conference** (Vol.1) Sinaia 27-29 Sept. 2006  
Page(s):119 – 122, ISSN:1545-827X, IEEE

### **33. “GaN micromachined FBAR structures for microwave applications”**

Müller A., D. Neculoiu, D. Vasilache, D. Dascalu, G. Konstantinidis, A. Kostopoulos, A. Adikimenakis, A. Georgakilas, K. Mutamba, C. Sydlo, H. L. Hartnagel, A. Dadgar  
**“Superlattices and Microstructures”** (Elsevier) 40, 2006, pp426-431

**DOI:** 10.1016/j.spmi.2006.07.014

### **34. InAlN/(In)GaN HEMTs for high power application**

J.Kuzmic, J-F. Carlin, A. Kostopoulos, G. Konstantinidis, S.Bychikhin, A.Georgakilas, D. Pogany  
MIKON 2006, Workshop on GaN Devices, May 25 2006, Krakow, Poland, pp. 110-124 (Invited)

### **35. “Experimental demonstration of negative magnetic permeability in the far-infrared frequency regime”**

T.F. Gundoglu, I. Tsiapa, A. Kostopoulos, G. Konstantinidis, N. Katsarakis, E.N. Economou, Th. Koschny and C.M. Soukoulis

**Applied Physics Letters** Vol. 89, 24 August 2006

**DOI:** 10.1063/1.2335955

### **36. “New development of GaN membranes based FBAR structures”**

D. Neculoiu, Müller A., D. Vasilache, D. Dascalu, G. Konstantinidis, A. Kostopoulos, A. Adikimenakis, A. Georgakilas, K. Mutamba, C. Sydlo, H. L. Hartnagel.  
Proc of the MEMSWAVE Conference, Orvieto, Italy, 2006, pp.51-54.

### **37. InAlN/GaN HEMTs: A first into technological optimization**

J.Kuzmic, A. Kostopoulos, G. Konstantinidis, J-F. Carlin, A.Georgakilas, D. Pogany  
**Transactions on Electron Devices** (TED), **IEEE**, Vol. 53, No. 3, pp. 422-426, March 2006

**DOI:** 10.1109/TED.2005.864379

### **38. “Micromachined GaN-based FBAR Structures for Microwave Applications”**

K. Mutamba, D. Neculoiu, A. Müller, G. Konstantinidis, D. Vasilache, C. Syblo, A. Kostopoulos, A. Adikimenakis, A. Georgakilas, H. L. Hartnagel

Proc of Asia Pacific Microwave Conference, Yokohama, Dec2006, pp.3-1757-1760.

**DOI:** 10.1109/APMC.2006.4429749

### **39. “Response to anions of AlGaIn/GaN high- electrons- mobility transistors”**

Y. Alifragis, A. Geograkilas, G. Konstantinidis, E. Iliopoulos, A. Kostopoulos, N. A. Chaniotakis  
**Applied Physics Letters** Vol. 87, 15 December 2005

**DOI:** 10.1063/1.2149992

### **40. “Magnetic response of split-ring resonators in the far infrared frequency regime”**

N. Katsarakis, G. Konstantinidis, A. Kostopoulos, R.S. Penciu, T.F. Gundoglu, Th. Koschny, M. Kafesaki, E.N. Economou, and C.M. Soukoulis

**Optics Letters**, Volume 30, Issue 11, pp. 1348-1350, June 2005

**DOI:** 10.1364/OL.30.001348

**41. Metallic bonding of optoelectronic dies to silicon wafers**

Minoglou, K., Kyriakis-Bitzaros, E.D., Grivas, E., Katsafouros, S., Kostopoulos, A., Konstantinidis, G., Halkias, G.

**Journal of Physics: Conference Series**, Volume 10, Issue 1, 1 January 2005, Pages 393-396

**DOI:** 10.1088/1742-6596/10/1/096

**42. “Technology, Properties and Limitation of State-of-the-art InAlN/GaN HEMTs”**

J.Kuzmic, J-F. Carlin, T. Kostopoulos, G. Konstantinidis, A. Georgakilas, D. Pogany

63<sup>rd</sup> Device Research Conference (DRC '05), Conference digest pp.57-58, Santa Barbara, June 20-22, 2005

**43. “An investigation into the charge distribution and barrier profile tailoring in AlGaIn/GaN double heterostructures by self-consistent Poisson-Schrödinger calculations and capacitance-voltage profiling”**

M. Zervos, A. Kostopoulos, G. Constantinidis, M. Kayambaki and A. Georgakilas

**J. Appl. Phys.** Vol. 91, Num. 7, 4387-4393, 1 April 2002

**DOI:** 10.1063/1.1459604

**44. “Control of the polarity of molecular-beam-epitaxy-grown GaN thin films by the surface nitridation of Al<sub>2</sub>O<sub>3</sub> (0001) substrates”**

S. Mikroulis, A. Georgakilas, A. Kostopoulos, V. Cimalla and E. Dimakis

**Applied Physics Letters** Vol. 80, Num.16, 2886-2888, 22 April 2002

**DOI:** 10.1063/1.1472481

**45. “The pinch-off behavior, charge distribution and current transport in AlGaIn/GaN double heterojunction HFETs”**

M. Zervos, A. Kostopoulos, G. Constantinidis, M. Kayambaki, S. Mikroulis, N. Flytzanis and A. Georgakilas

**Phys. Stat. Sol.(a)** 188, No. 1, 259-262 (2001)

**DOI:** 10.1002/1521-396X(200111)188:1<259::AID-PSSA259>3.0.CO;2-5

**46. “Effects of the sapphire nitridation on the polarity and properties of Ga layers grown by plasma-assisted MBE”**

A. Georgakilas, S. Mikroulis, V. Cimalla, M. Zervos, A. Kostopoulos, M. Androulidaki, Ph. Komninou, Th. Kehagias and Th. Karakostas

**Phys. Stat. Sol.(a)** 188, No. 2, 567-570 (2001)

**DOI:** 10.1002/1521-396X(200112)188:2<567::AID-PSSA567>3.0.CO;2-W

**47. Investigation of the nitridation of Al<sub>2</sub>O<sub>3</sub> (0001) substrates by a nitrogen radio frequency plasma source**

S. Mikroulis, V. Cimalla, A. Kostopoulos, G. Constantinidis, G. Drakakis, M. Zervos, M. Cengher and A. Georgakilas,

**Procc. of MMN 2000**, Athens 20-22, 2000, pp.135- 138

**48. Atomic force microscopy analysis of Ga-face and N-face GaN grown on Al<sub>2</sub>O<sub>3</sub> (0001) by plasma-assisted molecular beam epitaxy**

Kostopoulos, A., Mikroulis, S., Dimakis, E., Tsagaraki, K., Constantinidis, G., Georgakilas, A.

**ASDAM 2000** - Conference Proceedings: 3rd International Euro Conference on Advanced Semiconductor Devices and Microsystems 2000, Article number 889519, Pages 355-358 3rd International Euro Conference on Advanced Semiconductor Devices and Microsystems, ASDAM 2003; Smolenice Castle Smolenice; Slovakia; 16 October 2000 through 18 October 2000; Category number 00EX386; Code 116662

**DOI:** 10.1109/ASDAM.2000.889519

**49. Material properties of GaN films with Ga- or N- face polarity grown by MBE on Al<sub>2</sub>O<sub>3</sub> (0001) substrates under different growth conditions.**

A. Kostopoulos, S. Mikroulis, E. Dimakis, E-M Pavelescu, M Andrulidaki, K Tsagaraki, G. Constantinidis, A. Georgakilas,

**Procc. of MMN 2000**, Athens 20-22, 2000, pp.201- 204