

Full Publication List

Book Chapters

1. Doudin B and **Kemp NT**, “*Handbook of Spin Transport and Magnetism*”, Chapter 28 : Ballistic Spin Transport (August 25, 2011), Editors: Evgeny Tsymbal and Igor Žutić , Publishers: Chapman and Hall/CRC

In Primary Journals

2. Namhil ZG, Kemp C, Verrelli E, Iles A, Pamme N, Adawi AM, **Kemp NT** “*A Label-Free Aptamer-Based Nanogap Capacitive Biosensor with Greatly Diminished Electrode Polarization Effects*”, *PCCP* **21**, 681-691 (2019)
3. Cheng F, Verrelli E, Alharthi FA, Kelly SM, O’Neill M, **Kemp NT**, Kitney SP, Lai KT, Mehl GH, Anthopoulos T, “*Lyotropic ‘hairy’ TiO₂ nanorods as precursors for self-assembled dielectric layers*” *Nanoscale Advances*, **1**, 254, (2019)
4. Šuch O, Klimo M, **Kemp NT**, Škvarek O, “*Passive memristor synaptic circuits with multiple timing dependent plasticity mechanisms*” *IJEC (AEU)*, **96**, 252-259 (2018)
5. Mohammed AF, Al-Jarwany QA, Clarke AJ, Amaral TM, Lawrence J, **Kemp NT**, Walton CD, “*Ablation Threshold Measurements and Surface Modifications of 193 nm Laser Irradiated 4H-SiC*”, *Chem. Phys. Lett.* **713**, 194-202 (2018)
6. Gray RJ, Hamdiyah A Verrelli E, **Kemp NT**, “*Method to reduce the formation of crystallites in ZnO nanorod thin-films grown via ultra-fast microwave heating*”, *Thin Solid Films*, Vol. **662**(30) September 2018, 116-122 (2018)
7. Alharthi FA, Cheng F, Verrelli E, **Kemp NT**, Lee AF, Isaacs MA, O’Neill M, Kelly, SM, “*Solution-processable, niobium-doped titanium oxide nanorods for application in low-voltage, large-area electronic devices*”, *J. Mats. Chem. C*, **5**, 1038 (2017)
8. Jaafar AH, Gray RJ, Verrelli E, O’Neill M, Kelly SM and **Kemp NT**, “*Reversible optical switching memristors with tunable STDP synaptic plasticity: a route to hierarchical control in artificial intelligent systems*” *Nanoscale*, **9**, 17091 (2017)
9. Jabarullah NH, Mauldin C, Navarro LA, Golden J, Madianos LM, **Kemp, NT**, “*Modelling and Simulation Analysis for the Prediction of the Performance of Intrinsic Conducting Polymer Current Limiting Device*” *Advanced Science Letters*, **23** (6), 5117-5120 (2017)
10. Jabarullah NH, Verrelli E, Gee A, Mauldin C, Navarro LA, Golden JH and **Kemp NT**, “*Large Dopant Dependence of the Current Limiting Properties of Intrinsic Conducting Polymer Surge Protection Devices*”, *RSC Advances*, **6**, 85710-85717 (2016)
11. Jabarullah NH, Verrelli E, Mauldin C, Navarro LA, Golden JH, Madianos LM, **Kemp NT**, “*Superhydrophobic SAM Modified Electrodes for Enhanced Current Limiting Properties in Intrinsic Conducting Polymer Surge Protection Devices*”, *Langmuir* **31**(22), 6253-6264 (2015)
12. Popa PL, **Kemp NT**, Majjad H, Dalmas G, Faramarzi V, Dayen JF, Andreas C, Hertel R, Doudin B, “*The magnetochemical switch*”, *PNAS* **111**(29), 10433-10437 (2014)
13. Verrelli E, Gray RJ, O’Neill M, Kelly SM and **Kemp NT**, “*Microwave oven fabricated hybrid memristor devices for non-volatile memory storage*”, *Mater. Res. Express* **1**(4) 046305 (2014)
14. Jabarullah NH, Verrelli E, Mauldin C, Navarro LA, Golden J, Madianos L, Tsoukalas D and **Kemp NT**, “*Novel conducting polymer current limiting devices for low cost surge protection applications*”, *J. Appl. Physics* **116**, 164501 (2014)

15. Verrelli E, **Kemp NT**, O'Neill M, Cheng F, Alharti FA, Kelly SM, "*Synthesis and Characterization of a Solution Processable Hybrid Organic-Inorganic High-K Dielectric for Low-Voltage OFET Applications*", Journal of the Society for Information Display, 44(S1), 108-111 (2013)
16. **Kemp NT**, Cochrane JW, Newbury R, Dujardin E "*Electronic transport in conducting polymer nanowire array devices*" Nanotechnology, 22, 105202 (2011)
17. Beaufrand JB, Dayen JF, **Kemp NT**, Sokolov A, Doudin B, "*Magnetoresistance signature of resonant states in electromigrated Ni nanocontacts*", Appl. Phys. Letts 98, 142504 (2011)
18. Popa PL, Dalmas G, Faramarzi V, Dayen JF, Majjad H, **Kemp NT**, Doudin B, "*Heteronanojunctions with atomic size control using a lab-on-chip electrochemical approach with integrated microfluidics*", Nanotechnology 22, 215302 (2011)
19. Dayen JF, Faramarzi V, Pauly M, **Kemp NT**, Pichon B, Majjad H, Begin-Colin S, Doudin B, "*Nanotrench for nano and microparticle electrical interconnects*" Nanotechnology 33, 335303 (2010)
20. **Kemp NT**, Majjad H, Lunca-Popa P, Dalmas G, Doudin B "*Lab-On-Chip fabrication of atomic scale magnetic junctions*" ECS Trans. 16 (45) 3-10 (2009)
21. **Kemp NT**, Cochrane JW, Newbury R, "*Characteristics of the nucleation and growth of template-free polyaniline nanowires and fibrils*" Synth. Metals 159(5-6), 435 (2009)
22. Shi S, Schmerber G, Arabski J, Beaufrand J-B, Kim DJ, Boukari S, Bowen M, **Kemp NT**, Viart N, Rogez G, Beaurepaire E, Aubriet H, Petersen J, Becker C, Ruch D, "*Study of molecular spin-crossover complex Fe(phen)(2)(NCS)(2) thin films*" Appl. Phys. Letts, 95(4), 043303 (2009)
23. Lee JK, Cho JM, Shin WS, Moon SJ, **Kemp NT**, Zhang H, Lamb R, "*The stability of PEDOT:PSS films monitored by electron spin resonance*", JKPS, 52(3), 621 (2008)
24. **Kemp NT**, McGrouther D, Cochrane JW, Newbury R, "*Bridging the gap: polymer nanowire devices*" Advanced Materials, 19, 2634-2638 (2007)
25. **Kemp NT**, Cochrane JW, Newbury R, "*Patterning of conducting polymer nanowires on gold/platinum electrodes*" Nanotechnology 18, 145610-145617 (2007)
26. Summers K, **Kemp NT**, Paris NJ, Singh NK, "*Surface reactions of 2-iodopropane on GaAs(100)*" Surf. Sci , 601, 1443-1455 (2007)
27. **Kemp NT**, Kaiser AB, Trodahl HJ, Chapman B, Buckley RG, Partridge AC, Foot PJ, "*Effect of ammonia on the temperature-dependent conductivity and thermopower of polypyrrole*", J. Polym. Sci. 44(9) 1331-1338 (2006)
28. **Kemp NT**, Singh NK, "*Coupling vs surface etching reactions of alkyl halides on GaAs(100): I. CF₃CH₂I reactions*", Langmuir, 22(23) 9554-9565 (2006)
29. **Kemp NT**, Paris N, Singh NK, "*Coupling vs surface etching reactions of alkyl halides on GaAs(100): II. CH₂I₂ reactions*", Langmuir 22(14) 6222-6233 (2006)
30. **Kemp NT**, Singh NK, "*Evidence of carbon-carbon bond formation on GaAs(100) via Fischer-Tropsch methylene insertion reaction mechanism*", Chem. Commun., 4348-4350 (2005)
31. Kahol PK, **Kemp NT**, Kaiser AB, "*An EPR study of morphological disorder in polypyrrole through oxygen effects*" Solid State Commun. 135, 775-779 (2005)
32. Singh NK, **Kemp NT**, "*Coupling reactions of trifluoroethyl iodide on GaAs(100)*", J. Vac. Sci & Tech. 22(4), 1659-1666 (2004)
33. Newbury R, Wirtz R, Cochrane J, **Kemp NT**, Nicholls JT, Tribe WR, Simmons MY, Pepper M, "*One-dimensional ballistic conductors under high pressure*", IEEE, 11, 299-302 (2002)
34. Kahol PK, **Kemp NT**, Kaiser AB, "*EPR investigations of mesoscopic disorder in polypyrrole*".

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35. Kahol PK, **Kemp NT**, and Kaiser AB, “*Investigations of mesoscopic disorder in polypyrrole*” Bull. Am. Phys. Soc. 46, 472 (2001)
36. Bittar A, Trodahl HJ, **Kemp NT** and Markwitz A., “*Ion-assisted deposition of amorphous GaN: Raman and optical properties*”, Appl. Phys. Lett. Vol 78(5), 619 (2001)
37. **Kemp NT**, Flanagan GU, Kaiser AB, Trodahl HJ, et al “*Temperature-dependent conductivity of conducting polymers exposed to gases*” Synth. Met. 101(1-3), 434 (1999)
38. **Kemp NT**, Stewart AM, et al “*Thermoelectric power of the Fe₈₅-X(Cr, Ni)(X)B-15 series of glassy metals*” Journal of Magnetism & Magnetic Materials. 177(1), 129 (1998)
39. **Kemp NT**, Kaiser AB, Liu CJ, Chapman B, Mercier O, Trodahl HJ, et al “*Thermoelectric power and conductivity of different types of polypyrrole*” J. of Polym. Sci. 37(9), 953-960 (1999)
40. Chapman B, Buckley RG, **Kemp NT**, Kaiser AB, Beaglehole D, Trodahl HJ, “*Low-Energy conductivity of PF₆ – doped polypyrrole*” Phys. Rev. B. 60(19), 13479-13483 (1999)
41. Kaiser AB, Liu CJ, Gilberd PW, Chapman B, **Kemp NT** “*Comparison of electronic transport in polyaniline blends, polyaniline and polypyrrole*” Synthetic Metals. 84(1-3): 699 (1997)
42. Liu CJ, Gao J, Kaiser AB, **Kemp NT** et al, “*YBa₂Cu₃O_{7-δ} oriented thin films and magnetically aligned ceramic – anisotropic thermopower*”. Physica C. 278(3-4):143-148, (1997)

Published Conference Papers

43. Georgio J, Kossifos K, Antoniadis M, Jaafar A, **Kemp NT**, “*Chua Mem-Components for Adaptive RF Metamaterials*”, IEEE International Symposium on Circuits and Systems (ISCAS), 27-30 May, Florence, Italy (2018)
44. Georgio J, Kossifos K, Antoniadis M, Jaafar A, **Kemp NT**, “*An Optically-Programmable Absorbing Metasurface*”, IEEE International Symposium on Circuits and Systems (ISCAS), 27-30 May, Florence, Italy (2018)
45. Kahol PK, **Kemp NT**, and Kaiser AB, “*EPR investigations of mesoscopic disorder in polypyrrole*” American Physical Society (Seattle 2001); Bull. Am. Phys. Soc. 46, 472 (2001)
46. Bittar A, Trodahl HJ, **Kemp NT** et al, “*Preparation and characterisation of a-III N thin film materials*”, Nano-textured materials workshop; pp. 1-5, Christchurch, New Zealand (2000)

Press Articles

47. NanoWerk Spotlight Article: “*Reversibly controlling the learning properties of memristors via optical means*”, 30 Oct 2017 (www.nanowerk.com)
48. Daily News “*Tiny magnets, huge fields: Nanoscale ferromagnetic electrodes create chemical equivalent of solid-state spin valve*”, 31 Jul 2014 (<http://www.dailynewsen.com/>)
49. INP Scientific News: “*Un interrupteur magnéto-électro-chimique*”, 7 Aug 2014 (www.cnrs.fr)
50. NanoWerk Spotlight Article: “*A bottom-up technique for nanotechnology electronics fabrication*”, 27 Sept 2007 (www.nanowerk.com)
51. Nanotechnology Now: “*A bottom-up technique for nanotechnology electronics fabrication*”, 26 Sept 2007 (www.nanotech-now.com)

Abstracts and Short Papers

52. **Kemp NT** “*A route to hierarchical control in artificial intelligent systems: memristors with optically tunable STDP synaptic plasticity*”, 10th International Symposium on Flexible Organic Electronics (ISFOE17), 3-6 July 2017, Thessaloniki, Greece
53. **Kemp NT** “*Nanocomposite materials for low cost resistive switching memories*”, 14th International Conference on Nanosciences & Nanotechnologies (NN17), 4-7 July 2017, Thessaloniki, Greece
54. Namhil ZG, **Kemp NT** “*Nanogap Capacitive Biosensor For Label-Free Aptamer-Based Protein Detection*” Nanotech France, 28-30 June 2017, Paris, France
55. Moore J, Newton G, Verrelli E, Cheng F, Alharthi F, **Kemp NT**, Kelly SM, O’Neil M, , “Hybrid, Solution Processable and Photocrosslinkable Material Based on Titanium Dioxide Nanoparticles for Tuneable Organic Resistive Switching Memories” MRS Fall Meeting, 26 Nov – 1 Dec 2017, Boston
56. Hamdiyah A., Gray RJ, Verrelli E., **Kemp NT**, “Non-Volatile Resistive Switching Memories based on ZnO Nanorod - Polymer Hybrid Materials”, MRS Fall Meeting 28 Nov - 3rd Dec 2016, Boston, USA
57. Hamdiyah A., Gray RJ, Verrelli E., **Kemp NT**, “*Metal Nanoparticle – Polymer Hybrid Materials for Non-Volatile Resistive Switching Memories*”, 4th MemoCis Workshop, 15-17 Sept 2016, Palma, Mallorca
58. Hamdiyah A., Gray RJ, Verrelli E., **Kemp NT**, “*Non-Volatile Resistive Switching Memories based on Nanoscale Hybrid Materials*”, Integrating devices and materials: A challenge for new instrumentation in ICT, April 14-15 2016, Vilnius, Lithuania
59. Šuch O, Klimo M, Linn E, Ľapajna M, Jančovič P, Frohlich K, Hamdiyah A, Verrelli E, **Kemp NT**, “Coincidence adaptation in complementary resistive gates”, E-MRS 2016, Lille, France
60. **Kemp NT**, “*Electromigrated Nanogaps for Molecular Spintronics*”, 1st European Conference on Molecular Spintronics, 15-18 Nov 2016, Bologna, Italy
61. **Kemp NT**, “Nanoscale Materials for Novel Electronic Devices”, International Conference on Materials Chemistry, Sept 18-20 2015, Xi’an, China
62. Verrelli E, Gray RJ, Hamdiyah A, Gardner B, O’Neill M, Kelly SM, **Kemp NT**, “Hybrid Memristor Devices for Low Cost Non-Volatile Memory Storage”, International Conference on Memristive Systems, 8-10 Nov 2015, Paphos, Cyprus
63. Jabarullah NH, Mauldin C, Navarro C, Golden J, Madianos L, **Kemp NT**, “Statistical Analysis and Predictions Using Experimental Evidence for the Performance of Polymer Current-Limiting Device (CLD)”, International Conference on the Science and Engineering of Materials, 16-18 Nov 2015, Kuala Lumpur, Malaysia
64. Verrelli E, Cheng F, Alharthi F, Ibrahim M, **Kemp NT**, Kelly SM, O’Neill M, “Titanium Dioxide Nanorods: Hybrid Solution-Processable High-k Dielectrics for Organic Electronics” Materials Research Society Fall Meeting, Nov 29-Dec 4 2015, Boston, USA
65. Verrelli E, Cheng F, Alharthi F, Ibrahim M, **Kemp NT**, Kelly SM, O’Neill M, “Titanium Dioxide Nanorods: Hybrid, Solution Processable and Photocrosslinkable Resistive Switching Materials for Tuneable Organic Electronic Memories” Materials Research Society Fall Meeting, Nov 29-Dec 4 2015, Boston, USA
66. Cheng F, Verrelli E, Alharthi FA, Kitney SP, **Kemp NT**, O’Neill M, Kelly SM “*Preparation of Solution processable and Photocrosslinkable Organic-Inorganic Hybrid Material for Low-voltage OFET Applications*”, 7th International Symposium on Flexible Organic Electronics (ISFOE14), 9-12 July 2014, Thessaloniki, Greece

67. Alharthi FA, Cheng F, Verrelli E, Kitney SP, **Kemp NT**, O'Neill M, Kelly SM “*Preparation of Solution processable and Photocrosslinkable Organic-Inorganic Hybrid Material for Low-voltage OFET Applications*”, NANOSMAT, Sept 8-11, 2014, Dublin, Ireland,
68. O'Neill M, Alharthi FA, Al Kalifah MS, Cheng F, Ibrahim M, Kelly SM, **Kemp NT**, Kitney SP, Lei C, Myers SA, Verrelli E “*Organic and hybrid liquid crystals for photovoltaics and photoconductors*” 5th Workshop on Liquid Crystals for Photonics, September 3-6, 2014, Erice, Italy,
69. Verrelli E, Cheng F, Alharthi F, **Kemp NT**, O'Neill M, Kelly SM, “*Functionalized Titanium Oxide Nanorods as Hybrid, Solution Processable and Photocrosslinkable Resistive Switching Materials for Organic Electronic Memories*”, MRS Fall Meeting, Nov30 - Dec 5, 2014, Boston, USA,
70. Verrelli E, Cheng F, Alharthi F, **Kemp NT**, O'Neill M, Kelly SM, “*Hybrid, Solution Processable and Photocrosslinkable High-k Dielectric based on Titanium Oxide Nanorods for Organic Electronic Applications*”, MRS Fall Meeting, Nov30 - Dec 5, 2014, Boston, USA
71. Verrelli E, **Kemp NT**, O'Neill M, Cheng F, Alharti FA, Kelly SM, "Synthesis and Characterization of a Solution Processable Hybrid Organic-Inorganic High-K Dielectric for Low-Voltage OFET Applications", Proceedings of the 33rd International Display Research Conference EuroDisplay, Sept. 17-19, 2013, Imperial College London, UK
72. Verrelli E, **Kemp NT**, O'Neill M, Cheng F, Alharti FA, Kelly SM, "Solution Processable Hybrid Organic-Inorganic High-K Dielectric for Low-Voltage OFET Applications", 9th International Conference on Organic Electronics ICOE, June 17-20, 2013 MINATEC, Grenoble, France
73. Dayen JF, Faramarzi V, **Kemp NT**, et al “*Nanotrench : a tool for molecular based nanodevices*” ICME 2010, Emmetten, Switzerland
74. Shi S, Schmerber G, Beaufrand J-B, **Kemp NT**, Rogez G, Boukari S, Bowen M, Beaurepaire E, et al “*Electronic transport through a molecular spin crossover complex in metal-molecule-metal junctions*” SPINOS 2009, Salt Lake City, USA
75. [Invited Keynote] **Kemp NT** “*Bridging the gap: From conducting polymer nanowires to molecular and single atom devices*”, Particles Conference (Orlando 2008)
76. [Invited] **Kemp NT**, Majjad H, Lunca-Popa P, Dalmas G, Doudin B “*Magnetic Nanocontacts Fabricated by Electrochemical Techniques. Application to Spin Electronics at the Atomic Scale*”, PRIME (Honolulu 2008)
77. **Kemp NT**, Lunca-Popa P, Majjad H, G. Dalmas, Doudin B, “*Spin Electronics at the Atomic Scale*”, Electrochimie dans les Nanosciences 2008, Grenoble, France
78. **Kemp NT**, McGrouther D, Cochrane JW, Newbury RN, “*Bridging the Gap: Polymer Nanowire Devices*”, International Conference of Synthetic Metals 2006, Dublin, Ireland
79. **Kemp NT**, Singh NK, “*Carbon Chain Propagation via Multiple Methylene Insertion Reactions of Diiodomethane on GaAs(100)*”, IUVESTA 2004, Venice, Italy
80. Singh NK, **Kemp NT**, Paris N, “*Coupling reactions of trifluoroethyl iodide on GaAs(100)*”, American Vacuum Society 2003, Maryland, USA
81. **Kemp NT**, Alloul H, et al, “*C₆₀ biphenyl fulleride systems*” European Fullerene Properties Meeting 2001, Dresden, Germany
82. Trodahl HJ, Bittar A, Lanke U, **Kemp NT**, and S Granville, "Amorphous GaN: optical conducting properties" 25th ANZIP Condensed Matter Physics Conference 2001, Portage, New Zealand
83. **Kemp NT**, Kaiser AB, Trodahl HJ, Chapman, B. Buckley, R.G. Partridge, A.C. "Transport in Polypyrrole in the Presence of Gases" American Physical Society, 20-24 March 2000, Minneapolis, USA

84. **Kemp NT**, Kaiser AB *et al* “*Transport in the conducting polymer Polypyrrole*”, 9th New Zealand Institute of Physics Conference, 1999, Wellington, New Zealand
85. **Kemp NT**, Kaiser AB *et al*. “*Transport in the conducting polymer Polypyrrole*”, Australian and New Zealand Institute of Physics 21st Annual Condensed Matter Physics Meeting, 4-7 Feb 1997, Pakatoa Island, Hauraki Gulf, New Zealand