

## 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. Jaafar AH, **Kemp NT**, "[\*Wavelength dependent light tunable resistive switching graphene oxide nonvolatile memory devices\*](#)", Carbon **153**, 81-88 (2019)
3. Jaafar AH, O'Neill M, Kelly SM, Verrelli E and **Kemp NT** "[\*Percolation Threshold Enables Optical Resistive-Memory Switching and Light-Tuneable Synaptic Learning in Segregated Nanocomposites\*](#)", Adv. Elect. Mats. **5**(7), 1900197 (2019)
4. Cheng F, Young AJ, Bouillard J-S.G, **Kemp NT**, Guillet-Nicolas R, Hall CH, Roberts D, Jaafar AH, Adawi AM, Kleitz F, Imhof A, Reithofer MR, Chin JM, "[\*Dynamic Electric Field Alignment of Metal-Organic Framework Microrods\*](#)" J. Am. Chem. Soc. **141**(33) 12989-12993 (2019)
5. 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)
6. Cheng F, Verrelli E, Alharthi FA, Kelly SM, O'Neill M, **Kemp NT**, Kitney SP, Lai KT, Mehl GH, Anthopoulos T, "[\*Lyotropic 'hairy' TiO<sub>2</sub> nanorods as precursors for self-assembled dielectric layers\*](#)" Nanoscale Advances, **1**, 254, (2019)
7. Šuch O, Klimo M, **Kemp NT**, Škvarek O, "[\*Passive memristor synaptic circuits with multiple timing dependent plasticity mechanisms\*](#)" IJEC (AEU), **96**, 252-259 (2018)
8. 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)
9. 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)
10. 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)
11. 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)
12. 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)
13. 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)
14. 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)
15. 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)
  16. 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)
  17. 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)
  18. 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)
  19. **Kemp NT**, Cochrane JW, Newbury R, Dujardin E “*Electronic transport in conducting polymer nanowire array devices*” Nanotechnology, 22, 105202 (2011)
  20. Beaufrand JB, Dayen JF, **Kemp NT**, Sokolov A, Doudin B, “*Magnetochemical signature of resonant states in electromigrated Ni nanocontacts*”, Appl. Phys. Letts 98, 142504 (2011)
  21. 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)
  22. 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)
  23. **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)
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  25. 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)
  26. 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)
  27. **Kemp NT**, McGrouther D, Cochrane JW, Newbury R, “*Bridging the gap: polymer nanowire devices*” Advanced Materials, 19, 2634-2638 (2007)
  28. **Kemp NT**, Cochrane JW, Newbury R, “*Patterning of conducting polymer nanowires on gold/platinum electrodes*” Nanotechnology 18, 145610-145617 (2007)
  29. Summers K, **Kemp NT**, Paris NJ, Singh NK, “*Surface reactions of 2-iodopropane on GaAs(100)*” Surf. Sci , 601, 1443-1455 (2007)
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  31. **Kemp NT**, Singh NK, “*Coupling vs surface etching reactions of alkyl halides on GaAs(100): I. CF<sub>3</sub>CH<sub>2</sub>I reactions*”, Langmuir, 22(23) 9554-9565 (2006)
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  35. Singh NK, **Kemp NT**, “[Coupling reactions of trifluoroethyl iodide on GaAs\(100\)](#)”, J. Vac. Sci & Tech. 22(4), 1659-1666 (2004)
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  37. Kahol PK, **Kemp NT**, Kaiser AB, “[EPR investigations of mesoscopic disorder in polypyrrole](#)”. Synthetic Metals. 119, 201 (2001)
  38. 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)
  39. **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)
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  44. Liu CJ, Gao J, Kaiser AB, **Kemp NT** et al, “[YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-δ</sub> oriented thin films and magnetically aligned ceramic – anisotropic thermopower](#)”. Physica C. 278(3-4):143-148, (1997)

### Published Conference Papers

45. 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)
46. 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)
47. 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)
48. 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

49. Nanowerk Spotlight Article: “[Learning in artificial synapses tuned by light](#)”, 19 June 2019 (www.nanowerk.com)
50. NanoWerk Spotlight Article: “[Reversibly controlling the learning properties of memristors via optical means](#)”, 30 Oct 2017 (www.nanowerk.com)

51. Daily News "[Tiny magnets, huge fields: Nanoscale ferromagnetic electrodes create chemical equivalent of solid-state spin valve](http://www.dailynewsen.com/)", 31 Jul 2014 (<http://www.dailynewsen.com/>)
52. INP Scientific News: "Un interrupteur magnéto-électro-chimique", 7 Aug 2014 ([www.cnrs.fr](http://www.cnrs.fr))
53. NanoWerk Spotlight Article: "[A bottom-up technique for nanotechnology electronics fabrication](http://www.nanowerk.com)", 27 Sept 2007 ([www.nanowerk.com](http://www.nanowerk.com))
54. Nanotechnology Now: "[A bottom-up technique for nanotechnology electronics fabrication](http://www.nanotech-now.com)", 26 Sept 2007 ([www.nanotech-now.com](http://www.nanotech-now.com))

### Abstracts and Short Papers

55. **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
56. **Kemp NT** "Nanocomposite materials for low cost resistive switching memories", 14th International Conference on Nanosciences & Nanotechnologies (NN17), 4-7 July 2017, Thessaloniki, Greece
57. Namhil ZG, **Kemp NT** "Nanogap Capacitive Biosensor For Label-Free Aptamer-Based Protein Detection" Nanotech France, 28-30 June 2017, Paris, France
58. 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
59. 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 - 3<sup>rd</sup> Dec 2016, Boston, USA
60. Hamdiyah A., Gray RJ, Verrelli E., **Kemp NT**, "Metal Nanoparticle – Polymer Hybrid Materials for Non-Volatile Resistive Switching Memories", 4<sup>th</sup> MemoCis Workshop, 15-17 Sept 2016, Palma, Mallorca
61. 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
62. 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
63. **Kemp NT**, "Electromigrated Nanogaps for Molecular Spintronics", 1st European Conference on Molecular Spintronics, 15-18 Nov 2016, Bologna, Italy
64. **Kemp NT**, "Nanoscale Materials for Novel Electronic Devices", International Conference on Materials Chemistry, Sept 18-20 2015, Xi'an, China
65. 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
66. 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
67. 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

68. 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
69. 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", 7<sup>th</sup> International Symposium on Flexible Organic Electronics (ISFOE14), 9-12 July 2014, Thessaloniki, Greece
70. 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,
71. 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" 5<sup>th</sup> Workshop on Liquid Crystals for Photonics, September 3-6, 2014, Erice, Italy,
72. 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,
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76. Dayen JF, Faramarzi V, **Kemp NT**, et al "Nanotrench : a tool for molecular based nanodevices" ICME 2010, Emmetten, Switzerland
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78. **Kemp NT**, Lunca-Popa P, Majjad H, G. Dalmas, Douidin B, "Spin Electronics at the Atomic Scale", Electrochimie dans les Nanosciences 2008, Grenoble, France
79. **Kemp NT**, McGrouther D, Cochrane JW, Newbury RN, "Bridging the Gap: Polymer Nanowire Devices", International Conference of Synthetic Metals 2006, Dublin, Ireland
80. **Kemp NT**, Singh NK, "Carbon Chain Propagation via Multiple Methylene Insertion Reactions of Diiodomethane on GaAs(100)", IUVESTA 2004, Venice, Italy
81. Singh NK, **Kemp NT**, Paris N, "Coupling reactions of trifluoroethyl iodide on GaAs(100)", American Vacuum Society 2003, Maryland, USA
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83. 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

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86. **Kemp NT**, Kaiser AB *et al*. "*Transport in the conducting polymer Polypyrrole*", Australian and New Zealand Institute of Physics 21<sup>st</sup> Annual Condensed Matter Physics Meeting, 4-7 Feb 1997, Pakatoa Island, Hauraki Gulf, New Zealand