

Research Output 2012

1. M. Ahmed, A.A. Gazder, E.V. Pereloma, Microstructure evolution and alloying elements distribution between the phases in powder near- β titanium alloys during thermo-mechanical processing, *Journal of Materials Science*, 2012, 47(19), 7013-7025.
2. N. Dogan, B.J. Monaghan, R. Longbottom, M. Reid, X.C. Tsekouras, A Novel Laboratory Technique for Introducing Inclusion to Liquid Steel, presented at the Scanmet IV, 4th International Conference on Process Development in Iron and Steelmaking, Luleå, Sweden, 2012.
3. N. Dogan, B.J. Monaghan, R.J. Longbottom, M. Reid, X.C. Tsekouras, Why do we need new inclusion experimental techniques?, 4th Annual High Temperature Processing Symposium, Melbourne: Swinburne University of Technology, 2012, 63-66.
4. R. Jalili, J.M. Razal, G.G. Wallace, Exploiting high quality PEDOT:PSS-SWNT composite formulations for wet-spinning multifunctional fibers, *Journal of Materials Chemistry*, 2012, 22(48), 25174-25182.
5. K.-H. Seng, G.-D. Du, L. Li, Facile synthesis of graphene-molybdenum dioxide and its lithium storage properties, *Journal of Materials Chemistry*, 2012, 22(31), 16072-16077, DOI: <http://dx.doi.org/10.1039/c2jm32822d>.
6. K.S.B. De Silva, S. Gambhir, X.-L. Wang, X. Xu, W. Li, D.L. Officer, D. Wexler, G.G. Wallace, S.-X. Dou, The effect of reduced graphene oxide addition on the superconductivity of MgB₂, *Journal of Materials Chemistry*, 2012, 22(28), 13941-13946.
7. K.S.B. De Silva, X. Xu, X.L. Wang, D. Wexler, D. Attard, F. Xiang, S.-X. Dou, A significant improvement in the superconducting properties of MgB₂ by co-doping with graphene and nano-SiC, *Scripta Materialia*, 2012, 67(10), 802-805.
8. J. Foroughi, G.M. Spinks, S.R. Ghorbani, M.E. Kozlov, F. Safaei, G. Peleckis, G.G. Wallace, R.H. Baughman, Preparation and characterization of hybrid conducting polymer-carbon nanotube yarn, *Nanoscale*, 2012, 4, 940.
9. M. Ionescu, B. Winton, D. Wexler, R. Siegele, A. Deslantes, E. Stelcer, A. Atanacio, D.D. Cohen, Enhanced biocompatibility of PDMS (polydimethylsiloxane) polymer films by ion irradiation, *Nuclear Instruments and Methods in Physics Research B: Beam Interactions with Materials and Atoms*, 2012, 273, 161-163.

10. Y. Kong, C.-Y. Wang, Y. Yang, C.O. Too, G.G. Wallace, A battery composed of a polypyrrole cathode and a magnesium alloy anode: Towards a bioelectric battery, *Synthetic Metals*, 2012, 162, 584.
11. D. Li, Y.-D. Huang, N. Sharma, Z.-X. Chen, D.-Z. Jia, Z.-P. Guo, Enhanced electrochemical properties of LiFePO₄ by Mo-substitution and graphitic carbon-coating via a facile and fast microwave-assisted solid-state reaction, *Physical Chemistry Chemical Physics*, 2012, 14, 3634–3639.
12. X. Liu, Z.-L. Yue, T. Romeo, J. Weber, T. Scheuermann, S.E. Moulton, G.G. Wallace, Bio-functionalised anticorrosive silane coatings for magnesium alloys *Acta Biomaterialia*, 2012, In press, <http://dx.doi.org/10.1016/j.actbio.2012.12.025>.
13. L. Noerochim, J. Wang, D. Wexler, M. Rahman, J. Chen, H.-K. Liu, Impact of mechanical bending on the electrochemical performance of bendable lithium batteries with paper-like free-standing V₂O₅–polypyrrole cathodes, *Journal of Materials Chemistry*, 2012, 22(22), 11159-11165.
14. L. Noerochim, J. Wang, S. Chou, D. Wexler, Free-standing single-walled carbon nanotube/SnO₂ anode paper for flexible lithium-ion batteries, *Carbon*, 2012, 50(3), 1289-1297.
15. M. Rahman, J. Wang, R. Zeng, D. Wexler, H.-K. Liu, LiFePO₄–Fe₂P–C composite cathode: An environmentally friendly promising electrode material for lithium-ion battery, *Journal of Power Sources*, 2012, 206(5), 259-266.
16. C. Rathod, D. Wexler, T. Chandra, H.-J. Li, Microstructural characterisation of railhead damage in insulated rail joints, *Materials Science Forum*, 2012, 706-709, 2937-2942.
17. Y. Shi, S. Chou, J. Wang, D. Wexler, H. Li, H.-K. Liu, Y. Wu, Graphene wrapped LiFePO₄/C composites as cathode materials for Li-ion batteries with enhanced rate capability, *Journal of Materials Chemistry*, 2012, 22(32), 16465-16470.
18. D.-W. Su, M. Ford, G.-X. Wang, Mesoporous NiO crystals with dominantly exposed {110} reactive facets for ultrafast lithium storage, *Scientific Reports*, 2012, 2, 924, DOI: <http://dx.doi.org/10.1038/srep00924>.
19. D.-W. Su, H.J. Ahn, G.-X. Wang. SnO₂@graphene nanocomposites as anode materials for Na-ion batteries with superior electrochemical performance, *Chemical Communications*, 2013, DOI: <http://dx.doi.org/10.1039/c3cc40448j>.
20. D.-W. Su, H.J. Ahn, G.-X. Wang, Hydrothermal synthesis of α -MnO₂ and β -MnO₂ nanorods as high capacity cathode materials for Na-ion batteries, *Journal of Materials Chemistry A*, 2013, DOI: <http://dx.doi.org/10.1039/c3ta00031a>.

21. D.-W. Su, H. Liu, H.J. Ahn, G.-X. Wang, Synthesis of Highly Ordered Mesoporous Co₃O₄ for Gas Sensing. *Journal of Nanoscience and Nanotechnology*, 2013, 13, 3354-3359.
22. L.-H. Su, C. Lu, L.-Z. He, L.-C. Zhang, P. Guagliardo, A.K. Tieu, S.N. Samarin, J.F. Williams, H.-J. Li, Study of vacancy-type defects by positron annihilation in ultrafine-grained aluminum severely deformed at room and cryogenic temperatures, *Acta Materialia*, 2012, 60, 4218–4228.
23. L.-H. Su, C. Lu, G.-Y. Deng, A.K. Tieu, Microstructure and mechanical properties of AA5005/AA6061 laminated composite processed by accumulative roll bonding, *Metallurgical and Materials Transactions B*, 2012, DOI: <http://dx.doi.org/10.1007/s11663-013-9869-x>.
24. L.-H. Su, C. Lu, A.K. Tieu, G.-Y. Deng, Annealing behavior of accumulative roll bonding processed aluminum composites, *Steel Research International*, DOI: <http://dx.doi.org/10.1002/srin.201300032>.
25. I. Sultana, M.M. Rahman, J.-Z. Wang, C.-Y. Wang, G.G. Wallace, H.-K. Liu, All-polymer battery system based on polypyrrole (PPy)/para (toluene sulfonic acid) (pTS) and polypyrrole (PPy)/indigo carmine (IC) free standing films, *Electrochimica Acta*, 2012, 83, 209.
26. I. Sultana, M.M. Rahman, S. Li, J.-Z. Wang, C.-Y. Wang, G.G. Wallace, H.-K. Liu, Electrodeposited polypyrrole (PPy)/para (toluene sulfonic acid) (pTS) free-standing film for lithium secondary battery application, *Electrochimica Acta*, 2012, 60, 201.
27. I. Sultana, M.M. Rahman, J.-Z. Wang, C.-Y. Wang, G.G. Wallace, H.-K. Liu, Indigo carmine (IC) doped polypyrrole (PPy) as a free-standing polymer electrode for lithium secondary battery application, *Solid State Ionics*, 2012, 215, 29.
28. Z.-Q. Sun, J.-H. Kim, Y. Zhao, F. Bijarbooneh, V. Malgras, S.-X. Dou, Improved photovoltaic performance of dye-sensitized solar cells with modified self-assembling highly ordered mesoporous TiO₂ photoanodes, *Journal of Materials Chemistry*, 2012, 22, 11711.
29. G.G. Wallace, M.J. Higgins, S.E. Moulton, C.-Y. Wang, Nanobionics: The impact of nanotechnology on implantable medical bionic devices, *Nanoscale*, 2012, 4, 4327.
30. H. Wu, D. Wexler, H.-K. Liu, Effects of different palladium content loading on the hydrogen storage capacity of double-walled carbon nanotubes, *International Journal of Hydrogen Energy*, 2012, 37, 5686-5690.
31. H. Wu, D. Wexler, H.-K. Liu, Pt-Ni/C catalysts using different carbon supports for the cathode of the proton exchange membrane fuel cell (PEMFC), *Materials Chemistry and Physics*, 2012, 136(2-3), 845-849.

32. H. Wu, D. Wexler, G. Wang, H.-K. Liu, Co-core–Pt-shell nanoparticles as cathode catalyst for PEM fuel cells, *Journal of Solid State Electrochemistry*, 2012, 16(3), 1105-1110.
33. Y. Yang, C.-Y. Wang, B.B. Yue, S. Gambhir, C.O. Too, G.G. Wallace, Electrochemically Synthesized Polypyrrole/Graphene Composite Film for Lithium Batteries, *Advanced Energy Materials*, 2012, 2, 266.
34. X.-L. Yu, Z.-Y. Jiang, D.-J. Yang, D.-B. Wei, Q. Yang, Precipitation behavior of magnetite in oxide scale during cooling of microalloyed low carbon steel, *Advanced Materials Research*, 2012, 572, 249-254.
35. B.-B. Yue, C.-Y. Wang, P. Wagner, Y. Yang, X. Ding, D.L. Officer, G.G. Wallace, Electrodeposition of pyrrole and 3-(4-tert-butylphenyl)thiophene copolymer for supercapacitor applications, *Synthetic Metals*, 2012, 162, 2216.
36. B.-B. Yue, C.-Y. Wang, X. Ding, G.G. Wallace, Polypyrrole coated nylon lycra fabric as stretchable electrode for supercapacitor applications, *Electrochimica Acta*, 2012, 68, 18.
37. C. Zhang, X. Peng, Z.-P. Guo, C. Cai, Z. Chen, D. Wexler, S. Li, H.-K. Liu, Carbon-coated SnO₂/graphene nanosheets as highly reversible anode materials for lithium ion batteries, *Carbon*, 2012, 50(5), 1897-1903.