David C. Wallace

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Education

Ph.D, Solid State Chemistry, Johns Hopkins University (In Progress)

M.A., Chemistry, Johns Hopkins University, 2013.

B.A., Chemistry, Whitman College, 2006.

Experience

Johns Hopkins University, Baltimore, MD (2011–Present)

Research Assistant: Solid-state chemistry and condensed matter physics research under Prof. Tyrel M. McQueen.

Synthesis:

Characterization:

Data Analysis:

Teaching Assistant: General Chemistry I and II, Advanced Physical Chemistry Laboratory, Intermediate Organic Laboratory. Conducted weekly help sessions; delivered review lectures to classes of 200+ students; graded homework and exams; provided safety and procedural oversight in laboratories.

G&D Wallace Farms, Burlington, WA (1999-2011)

Farmer: Performed and oversaw nearly every aspect of growth and processing. Responsibilities included: pesticide application; processing plant oversight; crop monitoring; field inspection; assuring compliance with USDA and OSHA regulations; English-Spanish interpretation; mechanical work on tractors, trucks and farm implements; farm implement operation. (*Part-time 1999-2010, Full-time 2010-2011*)

Whitman College, Walla Walla, WA (2009-2010)

Research Assistant: Developed procedures for undergraduate lessons on Gas Chromatography-Mass Spectrometry (GC-MS) systems; wrote a detailed instruction and troubleshooting manual for Agilent Capillary Electrophoresis (CE) system for use by undergraduate students; developed methods for detection and quantification of triazine pesticides via CE with UV-Vis detection.

Department of Atmospheric Sciences, University of Washington, Seattle, WA (2009)

Research Assistant: Performed quantitative chemical analysis of aerosol samples and statistical analysis of resulting data; used meteorological data from the NOAA archive to attribute atmospheric aerosol profiles to regional sources.

Selected Presentations

High-T_c Cuprate Superconductors: Discovery, Chemical Themes, Synthetic Challenges. – Seminar on the Chemical Literature, Department of Chemistry, Johns Hopkins University, Baltimore, MD. October, 2013

Superconductivity and New Compounds in the Bi-O-S System – American Physical Society March Meeting, Baltimore, MD. March, 2013

Source attribution of climatically important aerosol properties measured at Paposo (Chile) during VOCALS. – Murdock Undergraduate Research Conference, Spokane, WA. November, 2009

Publications

Appeared

1. P. Cottingham, D. C. Wallace, K. Hu, G. Meyer, T. M. McQueen, Thermally-activated recombination in one component of $(CH_3NH_3)PbI_3/TiO_2$ observed by photocurrent spectroscopy. *Accepted to Chemical Communications, March 2015*

2. D. C. Wallace, C. M. Brown, T. M. McQueen, Evolution of Magnetism in the $Na_{3-\delta}(Na_{1-x}Mg_x)Ir_2O_6$ Series of Honeycomb Iridates. *Journal of Solid State Chemistry* **224**, 28-35 (2015)

3. K. E. Arpino*, D. C. Wallace*, Y. F. Nie*, T. Birol, P. D. C. King, S. Chatterjee, M. Uchida, S. M. Koohpayeh, J.-J. Wen, K. Page, C. J. Fennie, K. M. Shen & T. M. McQueen, Evidence for Topologically Protected Surface State and a Superconducting Phase in $[Tl_4](Tl_{1-x}Sn_x)Te_3$ Using Photoemission, Specific Heat, and Magnetization Measurements, and Density Functional Theory. *Physical Review Letters* **112**, 017002 (2014).

4. W. A. Phelan, D. C. Wallace, K. E. Arpino, J. R. Neilson, K. J. Livi, C. R. Seabourne, A. J. Scott, and T. M. McQueen, Stacking Variants and Superconductivity in the Bi-O-S system. *J. Am. Chem. Soc.* **135,** 5372-5374 (2013).

5. D. Chand, D. A. Hegg, R.Wood, G. E. Shaw, D. C. Wallace, and D. S. Covert, Source attribution of climatically important aerosol properties measured at Paposo (Chile) during VOCALS. *J. Atmos. Chem. Phys.* **10,** 1078910802 (2010).

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