TREVOR BYRNE

Verschuren Centre for Sustainability in Energy and the Environment · Cape Breton University · CS-226
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WORK EXPERIENCE

Yava Technologies Inc., Sydney NS — 2012 to Present
Senior Research Scientist

- Handled procurement and setup of equipment for initial lab start-up at Verschuren Centre
- Managed lab operations and maintained equipment
- Worked on developing leach mining technology and lithium-ion battery cathode material

Dalhousie University, Halifax NS — 2008 to 2012
Research Associate

- Responsible for initiating new research ideas, presenting results and preparing formal reports
- Worked on developing a process for converting raw product into a state-of-the-art Li-ion battery cathode material, in collaboration with Yava Technologies Inc. and 3M Company
- Filed patent application
- Supervised students in their research projects in the Dalhousie Integrated Science Program

Math Resources Inc., Halifax NS — 2007 to 2011
Accuracy Checker

- Responsible for writing and checking university-level physics, math and astronomy solutions appearing in McGraw-Hill Higher Education textbooks

Dalhousie University, Halifax NS — 2006 to 2008
Teaching Assistant

- Assisted students with laboratory experiments, corrected assignments and helped students one-on-one with homework problems

EDUCATION

M.Sc. Physics, Dalhousie University, NS — October 2008
Thesis: A high throughput approach to quantify protein adsorption on combinatorial metal/metal oxide surfaces using electron microprobe and spectroscopic ellipsometry
Supervisor**:** Dr. Jeff Dahn

- Collaborated in a business-like style with Medtronic Inc., a world leader in medical implant devices

B.Sc. Astronomy & Physics, honours program, Saint Mary's University, NS — May 2006

- Received NSERC USRA to assist faculty with summer research

REFEREED PAPERS

A.J. Smith, S.R. Smith, T. Byrne, J.C. Burns, J.R. Dahn, *J. Electrochem. Soc.*, "Synergies in Blended $LiMn_2O_4$ and $Li[Ni_{1/3}Mn_{1/3}Co_{1/3}]O_2$ Positive Electrodes" **159**, A1696 (2012)

M.A. McArthur, T.M. Byrne, R.J. Sanderson, G.P. Rockwell, L.B. Lohstreter, Z.J. Bai, M.J. Filiaggi, J.R. Dahn, "An in-situ study of protein adsorption on combinatorial Cu-Al films using spectroscopic ellipsometry" *Coll. & Surf. B*, **81**, 58 (2010)

T.M. Byrne, S. Trussler, M.A. McArthur, L.B. Lohstreter, Z.J. Bai, M.J. Filiaggi, J.R. Dahn, "A new simple tubular flow cell for use with variable angle spectroscopic ellipsometry: A high throughput in-situ protein adsorption study" *Surface Science,* **603**, 2888 (2009)

T.M. Byrne, L.B. Lohstreter, M.J. Filiaggi, Z.J. Bai, J.R. Dahn, "Quantifying protein adsorption on combinatorially sputtered Al-, Nb-, Ta- and Ti-containing films with electron microprobe and spectroscopic ellipsometry" *Surface Science*, **603**, 992 (2009)

T. Byrne, L. Lohstreter, M.J. Filiaggi, Z. Bai, J.R. Dahn, "A high throughput approach to quantify protein adsorption on combinatorial metal/metal oxide surfaces using electron microprobe and spectroscopic ellipsometry, *Surface Science*, **602**, 2927 (2008)

Z. Bai, T. Byrne, M.J. Filiaggi, R.J. Sanderson, V. Chevrier, P. Stoffyn-Egli, J.R. Dahn, "A high throughput method using electron microprobe analysis for quantification of protein adsorption on surfaces", *Surface Science*, **602**, 795 (2008)

TECHNICAL

Materials science, materials processing, scanning electron microscope, electron microprobe, ultrasonic processing, inductively-coupled plasma mass spectrometry, X-ray diffraction, Rietveld refinement, lithium-ion cell assembly, cyclic voltammetry, magnetron sputtering, thermal gravimetric analysis, pycnometry, spectroscopic ellipsometry, particle size analysis, stylus profilometry