David J. Neivandt
Assistant Professor
Department of Chemical and Biological Engineering
University of Maine
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Professional Preparation:
University of Melbourne, Physical Chemistry B.Sc.(Hons), 1st, 1993
University of Melbourne, Physical Chemistry, Ph.D., 1998
University of Cambridge, Interfacial Laser Spectroscopy, 1998-2001

Appointments:
Assistant Professor of Chemical and Biological Engineering, University of Maine (2001- present)
Oppenheimer Research Fellow, Department of Chemistry, University of Cambridge, Cambridge, UK (1998 – 2001)
Visiting Scientist, Xerox Research Center of Canada, Mississauga, Canada (June-October 1995 & 1996)

Publications Most Closely Related to the Proposed Work:
1. Holman J, Davies PB, Nishida T, Ye S, Neivandt D J. 2005. Sum frequency generation from langmuir blodgett multilayer films on metal and dielectric substrates. J. Phys. Chem. B 109, 18723. Feature Article and Cover Article
2. Lambert AG, Davies PB, Neivandt DJ. 2005. Implementing the theory of sum frequency generation vibrational spectroscopy: a tutorial review. *Appl. Spec. Reviews* 40, 103.
3. Doyle AW, Fick J, Himmelhaus M, Eck W, Graziani I, Prudovsky I, Grunze M, Maciag T, Neivandt, D. J. 2004. Protein deformation of lipid hybrid bilayer membranes studied by sum frequency generation vibrational spectroscopy (SFS). Langmuir 20, 8961.
4. McGall SJ, Davies PB, Neivandt DJ. 2004. Interference effects in sum frequency generation vibrational spectra of thin polymer films: an experimental and theoretical investigation. J. Phys. Chem. B. 108, 16030.
5. Lambert AG, Neivandt DJ, Briggs AM, Usadi EW, Davies PB. 2002. Interference effects in sum frequency spectra from monolayers on composite dielectric/metal substrates, J. Phys. Chem. B., 106:5461-5469. Cover Article

Other Significant Publications:
1. Holman J, Ye S, Neivandt D J, Davies PB. 2004. Studying nanoparticle-induced structural changes within fatty acid multilayer films using sum frequency generation vibrational spectroscopy, J. Am. Chem. Soc. 126, 14322.
2. Holman J, Neivandt DJ, Davies PB. 2004. Nanoscale interference effect in sum frequency generation from langmuir-blodgett fatty acid films on hydrophobic gold. Chem. Phys. Letts. 386, 60.
3. Holman J, Davies PB, Neivandt DJ. Sum Frequency spectroscopy of langmuir-blodgett fatty acid films on hydrophobic gold. J. Phys. Chem. B. 108, 1396.
4. McGall SJ, Davies PB, Neivandt DJ. 2003 Sum frequency vibrational spectroscopy of the comb copolymer cetyl dimethicone copolyol, J. Phys. Chem. B. 107, 4718.
5. Lambert AG, Neivandt DJ, Brigg, AM, Usadi EW, Davies PB. 2002. Enhanced sum frequency generation from a monolayer adsorbed on a composite dielectric/metal substrate, J. Phys. Chem. B., 106:10693-10700.

Synergistic Activities:
Multidisciplinary Teaching: Developed a 400 level course in Polymer Science and Technology for students in chemical engineering, chemistry, forestry, mechanical engineering and biology.
Undergraduate Mentoring: Have mentored nine undergraduate students in research activities including summer internships, semester employment, undergraduate theses and REU host.
Interdisciplinary, Inter-Institutional Service: Active member of several programs that foster research and educational collaborations between scientists at The Jackson Laboratory, the Maine Medical Center Research Institute, and UMaine including the Graduate School of Biomedical Sciences (member recruitment committee), Institute for Molecular Biophysics and the Functional Genomics IGERT program (recruitment committee chair).

Increasing Minority Participation in STEM Disciplines: Active participation in the North East Alliance for Graduate Education and the Professoriate (NEAGAP) efforts to increase and retain underrepresented minority students in STEM graduate programs.
Consulting: Actively consult technically and as an expert witness. Patented on interfacial science related to the papermaking, coatings and composites industries, including with undergraduates.

Collaborators:
Casford, M.T.L. University of Cambridge
Davies, P.B. University of Cambridge
Eck, W. University of Heidelberg
Graziani, I. Maine Medical Center
Grunze, M. University of Heidelberg
Himmelhaus, M. University of Heidelberg
Holman, J. Beyond Petroleum
Lambert A.. Ministry of Defense, UK
McGall, S.J. Proctor and Gamble
Millard, P. University of Maine
Nishida, T. Hokkaido University
Prudovsky, I. Maine Medical Center
Tripp, C.P. University of Maine
Ye, S. Hokkaido University

Graduate and Postdoctoral Advisors:
Davies, P.B. University of Cambridge (Postdoctoral)
Gee, M.L. University of Melbourne (Graduate)
White, L.R. Carnegie Mellon (Graduate)

Thesis Advisor and Postdoctoral Sponsor:
Casford, M.T.L., Cambridge, advisor
Doyle, A.W., Maine, advisor
Fick, J., Maine, postdoc sponsor
Gagnon, G., Maine, advisor
Gaudry, M., Cambridge, postdoc advisor
Holman, J., Cambridge, advisor
Lambert, A., Cambridge, advisor, postdoc sponsor
Li, L., Maine, advisor
McGall, S.J., Cambridge, advisor
Poirier, J., Maine, advisor
Sterling, S., Maine, advisor
Windsor, R., Cambridge, advisor

Total number of graduate students advised: 10
Total number of postdoctoral scholars sponsored: 3