Stanford



Nathan D Burrows

Life Science Research Prof 2, Stanford Synchrotron Radiation Lightsource

Curriculum Vitae available Online

Bio

CURRENT ROLE AT STANFORD

Electron Microscopy Specialist

CryoEM Specialist

HONORS AND AWARDS

- Centre for Nanoscale Science Outreach Leadership Award, Pennsylvania State University (April 2018)
- Office of Postdoctoral Affairs Travel Award, Pennsylvania State University (August 2017)
- NRMN-CAN Postdoc Mentor Training Workshop Travel Award, National Research Mentoring Network (April 2017)
- NextProf Science 2015, University of Michigan (March 2015)
- Gordon Research Conference Encore Poster Session, Gordon Research Conferences (June 2014)
- ACS Postdoc to Faculty Workshop Travel Award, American Chemical Society (June 2013)
- MN ACS Travel Grant, Minnesota Section of the American Chemical Society (August 2011)
- UMN Graduate School International Thesis Research Grant, University of Minnesota (2011)
- UMN Chemistry Departmental Fellowship, University of Minnesota (Sept. 2007 - Sept. 2008)
- Research Experience for Undergraduates, Stony Brook University (May 2006 - Aug. 2006)
- Paul W . Stor Chemistry Scholarship, Concordia University, St. Paul, MN (May 2005, May 2006)
- Freshmen Chemistry Award, Concordia University, St. Paul, MN (May 2004)
- Dean’ s Natural Science Scholarship, Concordia University, St. Paul, MN (2003, 2004, 2005, 2006)
- Eagle Scout, Boy Scouts of America (2000)

EDUCATION AND CERTIFICATIONS

- Doctor of Philosophy, University of Minnesota , Materials Chemistry (2013)
- Master of Science, University of Minnesota , Materials Chemistry (2009)
- Bachelor of Arts, Concordia University, St. Paul, MN , Majoring in Chemistry & Minoring in Theatre (2007)

Professional

WORK EXPERIENCE

- Adjunct Lecturer - University of Minnesota (12/15/2021 - 6/15/2022)
- Assistant Research Professor - Pennsylvania State University (7/1/2019 - 6/30/2021)

- MRSEC IRG4 Postdoctoral Scholar - Pennsylvania State University (8/15/2016 - 6/30/2019)
- Postdoctoral Research Associate - University of Illinois at Urbana-Champaign (2/15/2013 - 7/15/2016)
- Visiting Graduate Student Research Assistant - Technion-Israeli Institute of Technology (5/1/2011 - 5/30/2011)
- Graduate Student Research Assistant - University of Minnesota (6/15/2007 - 2/15/2013)

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Member, American Chemical Society (2003 - present)
- Member, Microscopy Society of America (2022 - present)
- Member, MN Queer Science: A Network of Lesbian, Gay, Bi, Transgender, and Ally Scientists and Engineers (2010 - 2013)
- Member, UMN Queer Graduate and Professional Student Association (2007 - 2013)
- President, Tetra Delta Science Club (2005 - 2007)
- Secretary, Tetra Delta Science Club (2003 - 2005)

Publications

PUBLICATIONS

- **Metagenomic analysis of microbial communities yields insight into impacts of nanoparticle design** *NATURE NANOTECHNOLOGY*
  Metch, J. W., Burrows, N. D., Murphy, C. J., Pruden, A., Vikesland, P. J.
  2018; 13 (3): 253-+
- **Understanding the Seed-Mediated Growth of Gold Nanorods through a Fractional Factorial Design of Experiments** *LANGMUIR*
  Burrows, N. D., Harvey, S., Idesis, F. A., Murphy, C. J.
  2017; 33 (8): 1891-1907
- **Sulfate-Mediated End-to-End Assembly of Gold Nanorods** *LANGMUIR*
  Abtahi, S. H., Burrows, N. D., Idesis, F. A., Murphy, C. J., Saleh, N. B., Vikesland, P. J.
  2017; 33 (6): 1486-1495
- **Surface Chemistry of Gold Nanorods** *LANGMUIR*
  Burrows, N. D., Lin, W., Hinman, J. G., Dennison, J. M., Vartanian, A. M., Abadeer, N. S., Grzincic, E. M., Jacob, L. M., Li, J., Murphy, C. J.
  2016; 32 (39): 9905-9921
- **Thermal Transport across Surfactant Layers on Gold Nanorods in Aqueous Solution** *ACS APPLIED MATERIALS & INTERFACES*
  Wu, X., Ni, Y., Zhu, J., Burrows, N. D., Murphy, C. J., Dumitrica, T., Wang, X.
  2016; 8 (16): 10581-10589
- **Anisotropic Nanoparticles and Anisotropic Surface Chemistry** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*
  Burrows, N. D., Vartanian, A. M., Abadeer, N. S., Grzincic, E. M., Jacob, L. M., Lin, W., Li, J., Dennison, J. M., Hinman, J. G., Murphy, C. J.
  2016; 7 (4): 632-641
- **In solution SERS sensing using mesoporous silica-coated gold nanorods** *ANALYST*
  Gao, Z., Burrows, N. D., Valley, N. A., Schatz, G. C., Murphy, C. J., Haynes, C. L.
  2016; 141 (17): 5088-5095
- **Anisotropic Noble Metal Nanocrystal Growth: The Role of Halides** *CHEMISTRY OF MATERIALS*
  Lohse, S. E., Burrows, N. D., Scarabelli, L., Liz-Marzan, L. M., Murphy, C. J.
  2014; 26 (1): 34-43
- **Crystalline nanoparticle aggregation in non-aqueous solvents** *CRYSTENGCOMM*
  Burrows, N. D., Kesselman, E., Sabyrov, K., Stemig, A., Talmon, Y., Penn, R.
  2014; 16 (8): 1472-1481
- **Microfluidic-SERS devices for one shot limit-of-detection** *ANALYST*

Kim, D., Campos, A. R., Datt, A., Gao, Z., Rycenga, M., Burrows, N. D., Greeneltch, N. G., Mirkin, C. A., Murphy, C. J., Van Duyne, R. P., Haynes, C. L.
2014; 139 (13): 3227-3234

- **Cryogenic Transmission Electron Microscopy: Aqueous Suspensions of Nanoscale Objects** *MICROSCOPY AND MICROANALYSIS*
  Burrows, N. D., Penn, R.
  2013; 19 (6): 1542-1553
- **Effect of pH on the Kinetics of Crystal Growth by Oriented Aggregation** *CRYSTAL GROWTH & DESIGN*
  Burrows, N. D., Hale, C. R. H., Penn, R.
  2013; 13 (8): 3396-3403
- **Size-Dependent Anatase to Rutile Phase Transformation and Particle Growth** *CHEMISTRY OF MATERIALS*
  Sabyrov, K., Burrows, N. D., Penn, R.
  2013; 25 (8): 1408-1415
- **Effect of Ionic Strength on the Kinetics of Crystal Growth by Oriented Aggregation** *CRYSTAL GROWTH & DESIGN*
  Burrows, N. D., Hale, C. R. H., Penn, R.
  2012; 12 (10): 4787-4797
- **Aggregation of ferrihydrite nanoparticles in aqueous systems** *FARADAY DISCUSSIONS*
  Yuwono, V. M., Burrows, N. D., Soltis, J. A., Tram Anh Do, Penn, R.
  2012; 159: 235-245
- **Oriented Aggregation: Formation and Transformation of Mesocrystal Intermediates Revealed** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Yuwono, V. M., Burrows, N. D., Soltis, J. A., Penn, R.
  2010; 132 (7): 2163-+
- **Quantifying the Kinetics of Crystal Growth by Oriented Aggregation** *MRS BULLETIN*
  Burrows, N. D., Yuwono, V. M., Penn, R.
  2010; 35 (2): 133-137