

SHOHAM BHADRA

Ph.D., P.E., CFEI, PMP

Entrepreneurial technical product and program manager with a 10+ year track record of successfully taking ideas from creation to implementation in electronics, hardware, medical devices, and energy storage applications. Empathetic leader of cross-disciplinary teams, and effective communicator across the spectrum of technical expertise. Able to balance quantitative and qualitative data to launch new technology products that are properly positioned to succeed. 5+ years of technical consulting

EXPERIENCE

EXPONENT, INC. • Materials and Corrosion Engineering Practice Natick, MA
Manager / Managing Engineer Apr 2020 – Present

- Lead cross-disciplinary product and program teams (team size: 3 – 15, Ph.D. level) using Agile and traditional methods, influencing and directing stakeholders across all levels within the organization.
- Strategically prioritized requirements, determined success metrics, and established scope and budget on more than 45 technical consulting programs and projects, totaling \$1.1 million in revenue.
- Tracked technology industry trends, actively marketed to clients, and cultivated customer relationships with multiple multi-billion dollar companies.
- Evaluated customer needs using quantitative and qualitative data to successfully capture 32 new business engagements.
- Educated and advised external stakeholders of varying levels of technical ability and organizational influence (from engineers to CEOs) on ways to incorporate new technology, optimize engineering processes, mitigate risk, and improve safety at all points in the product lifecycle.
- Consulted on over 200 programs and projects for national and international clients in electronics, hardware, robotics, medical devices, software, and energy storage.
- Organized a company-wide task force to determine best methods for marketing to untapped markets using internal marketing data and external thought leadership.
- Hired one direct report through recruiting efforts with the local academic and technical communities, and mentored junior staff on career development and company culture.
- Co-authored four industry standards on lithium-ion battery safety and usage, and a book chapter about grid energy storage.

Senior Engineer Apr 2018 – Mar 2020

- Managed internal and external resources to ensure programs were completed and products were launched on schedule and within budget, resulting in satisfaction and repeat business from clients.
- Testified as an expert witness about batteries for a consumer electronics arbitration.
- Promoted from Associate for demonstrated professional growth through multiple certifications and clear technical expertise.

Associate Jan 2016 – Mar 2018

- Designed and conducted experiments pertaining to energy storage and materials engineering.
- Generated reports and presented results to senior staff and external clients.

PRINCETON UNIVERSITY • Department of Mechanical Engineering Princeton, NJ
Doctoral Researcher • Steingart Lab Aug 2013 – Sep 2015

- Managed and mentored undergraduate research students and helped them to successfully publish their research.
- Applied rapid-prototyping methods (laser-cutting, 3D printing, CNC milling) to manufacture mechanical prototypes and experimental setups.
- Presented at 4 international research conferences and co-authored/published 5 peer-reviewed publications.
- Developed a novel technique for battery analysis using ultrasound – granted US Patent No. 10,132,781.




PRINCETON UNIVERSITY • Department of Electrical Engineering Princeton, NJ
Doctoral Researcher • Nanostructures Lab Jan 2011 – Aug 2013

- Developed methods for large-scale ordering of diblock copolymers, and nanoimprint patterning of silicon substrates for use in lithium-ion batteries.

SKILLS

Business	<ul style="list-style-type: none">• Marketing• Client management• Risk management• Business strategy• External partnerships
Product/Program Management	<ul style="list-style-type: none">• Customer needs research• Defining/Tracking KPIs• Agile/Kanban/Scrum• Waterfall/Phase gate• Roadmapping• Reporting/Presenting• Budgeting
People	<ul style="list-style-type: none">• Negotiating• Mentoring• Conflict management• Technical/non-technical communication
Technical	<ul style="list-style-type: none">• Quality analysis• Data analysis• Python• Rapid prototyping
Languages	<ul style="list-style-type: none">• Bengali (fluent)• French (conversational)
Conceptual Knowledge	<ul style="list-style-type: none">• AI/Machine learning• Data science• Software development life cycle• Product life cycle• SQL
Passions	<ul style="list-style-type: none">• Swing dance instruction• Barbecue• Musical theatre

CONTACT

 +1 732 835 8822
 shoham.bhadra@gmail.com
 linkedin.com/in/shohambhadra

EDUCATION

PRINCETON UNIVERSITY • Ph.D.
Electrical Engineering & Materials Science
Sep 2015

PRINCETON UNIVERSITY • M.A.
Electrical Engineering
Sep 2012

UNIVERSITY OF PENNSYLVANIA • M.S.E.
Materials Science & Engineering
May 2010

UNIVERSITY OF PENNSYLVANIA • B.S.E.
Materials Science & Engineering
May 2010

STANDARDS COMMITTEES

Authoring Member:

- IEEE 1725 (expected publication: 2021) – IEEE Standard for Rechargeable Batteries for Cellular Telephones
- IEEE P2686 (expected publication: 2021) – Recommended Practice for Battery Management Systems in Energy Storage Applications
- IEEE 1679.1:2017 – IEEE Guide for the Characterization and Evaluation of Lithium-Based Batteries in Stationary Applications
- IEEE 1679:2020 – IEEE Recommended Practice for the Characterization and Evaluation of Energy Storage Technologies in Stationary Applications

Balloting Member:

- IEEE 1679.2:2018 – IEEE Guide for the Characterization and Evaluation of Sodium-Beta Batteries in Stationary Applications

CERTIFICATIONS

Project Management Institute:

Project Management Professional (PMP) #2905219

Massachusetts Board of Registration of Professional Engineers:

Licensed Professional Metallurgical Engineer #55099

Texas Board of Professional Engineers:

Licensed Professional Metallurgical Engineer #134172

National Association of Fire Investigators:

Certified Fire and Explosion Investigator (CFEI) in accordance with the National Association of Fire Investigators National Certification Board, 21665-12249p

PATENTS

- D.A. Steingart, **S. Bhadra**, A.G. Hsieh, B.J. Hertzberg, P.J. Gjeltema, C.W Rowley III, US Patent 10,684,262: "Apparatus and Method for Determining State of Charge (SOC) and State of Health (SOH) of Electrical Cells." – 2020 (Continuation)
- D.A. Steingart, **S. Bhadra**, A.G. Hsieh, B.J. Hertzberg, P.J. Gjeltema, C.W Rowley III, US Patent 10,132,781: "Apparatus and Method for Determining State of Charge (SOC) and State of Health (SOH) of Electrical Cells." – 2018
- H. Bui, M. Kanji, C. Lo, B.T. Bavouzet, **S. Bhadra**, US Patent 9,078,835: "Composition containing an aqueous dispersion of polyurethane and an oil-soluble polar modified polymer." – 2015

PUBLICATIONS

- B. Pinnangudi, M. Kuykendal, **S. Bhadra**. "Smart Grid Energy Storage." Chapter 4 in: *The Power Grid: Smart, Secure, Green and Reliable*, 1st Edition, 2017.
- S. Bhadra**, A.G. Hsieh, M.J. Wang, B.J. Hertzberg, D.A. Steingart, "Anode Characterization in Zinc-Manganese Dioxide AA Alkaline Batteries Using Electrochemical-Acoustic Time-of-Flight Analysis." – Journal of the Electrochemical Society 2016.
- S. Bhadra**, B. J. Hertzberg, M. Croft, J.W. Gallaway, B.J. VanTassell, M. Chamoun, C. Erdonmez, Z. Zhong, D.A. Steingart, "Relationship Between Coefficient of Restitution and State of Charge of Zinc Alkaline Primary LR6 Batteries." – Journal of Materials Chemistry A 2015.
- A.G. Hsieh, **S. Bhadra**, B. J. Hertzberg, P.J. Gjeltema, A. Goy, J.W. Fleischer, D.A. Steingart, "Electrochemical-Acoustic Time of Flight: *In Operando* Correlation of Physical Dynamics with Battery Charge and Health." – Energy and Environmental Science 2015.
- M. Chamoun, B.J. Hertzberg, T. Gupta, **S. Bhadra**, B.J. Van Tassell, C. Erdonmez, D.A. Steingart, "Hyper Dendritic Zinc Foam Anodes." – NPG Asia Materials 2015.
- E.N. Mills, J. Cannarella, Q. Zhang, **S. Bhadra**, C.B. Arnold, S.Y. Chou, "Silicon Nanopillar Anodes for Lithium-Ion Batteries Using Nanoimprint Lithography with Flexible Molds." – JVST B 2014.