



Bahrum Prang Rocky, Ph.D.

Analytical Scientist III

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Skills

- Analytical Problem Solving
- Research & Innovation
- Fibers & Polymers Expertise
- Chemical Industry Proficiency
- Textile Industry Experience
- Printing & Packaging Skills
- Data Analytics Expertise
- Materials Selection Abilities
- Product Design Skills
- Color Management Expertise
- Strong Communication Skills
- Sales & Promotion Skills
- Quick Learning Capability
- Decision-Making Expertise
- Dedicated Work Ethic
- Versatile Training Background
- Proficiency in FMEA
- MS Office Suite Mastery



Professional Summary

Experienced Analytical Scientist with 12+ years of combined experience in industry, academia, and R&D with expertise spanning dispersion and resin chemicals, functional additives, emulsions, pigments, latex polymers, coatings, adhesives, fibers, textiles, papers, steel, and metals. Proficient in analyzing and developing innovative solutions across diverse industries, including construction, automotive, packaging, and nonwovens, with a strong focus on materials characterization, product formulation, and failure analysis. Currently serving as an Analytical Scientist III at BASF for over 2 years. Previously worked as a Research Scientist in the Department of Metallurgical and Materials Engineering at the University of Alabama for 3+ years, a 2-year executive officer in the textile dyeing industry, and a 2-year university lecturer.



Work History

Analytical Scientist III

[2023/04 – Current]

BASF-North America, Charlotte Technical Center, NC, USA (2+ years)

- Conduct advanced testing with thermal, chemical, mechanical, physical, and microscopic analyses of BASF products, including formulation, deformulation, failure diagnostics and recommend improvements & innovative solutions.
- Provide technical support to BASF production sites across North and South America, addressing product anomalies and failures to ensure operational efficiency.
- Perform Tests with PyGC, LCMS, GC, GPC, VOC, DSC, DMA, TGA, SEM, EDS, FTIR, LM and UV-vis.
- Responsible for method development, JSA, SOP and technical report writing, safety and compliance training, and ensuring adherence to OSHA, EPA, and FDA regulations.

Research Scientist II

[2022/08 – 2023/04]

University of Alabama, Tuscaloosa, AL, USA (9 months)

- Supported grant proposals, securing two grants exceeding \$1M each.
- Managed research projects and delivered technical and training support across multiple initiatives.
- Conducted material testing and analysis, including different chemicals, nanomaterials, textiles, fibers, and polymers.
- Utilized tools like EDM, SEM, TEM, XRD, AutoCAD, SolidWorks, Matlab, and others.

Postdoctoral Research Scientist

[2020/01 – 2022/07]

University of Alabama, Tuscaloosa, AL, USA (1.7 years)

- Led multiple projects on metals and textiles, creating innovative solutions for nanomaterials and chemical formulations.
- Delivered 36 milestones, 3 annual reports, 3 grant proposals, and 5 conference presentations.
- Collaborated with industries on production processes and customized machinery.

Research Assistant

[2015/07 – 2019/12]

University of Alabama, Tuscaloosa, AL, USA (4.4 years)

- Conducted data analysis, technical writing, and contributed to six research projects.
- Assessed mechanical and color properties of over 300 fiber, textile, and apparel products.
- Developed innovative fibers for commercial applications.

Lecturer, Textile Engineering

[2013/01 – 2015/07]

Green University of Bangladesh & Daffodil International University, Dhaka, Bangladesh (2.8 years)

- Taught 19 undergraduate courses in textiles, quality control, dyeing, and fabric design.
- Mentored over 1,000 students on academic and research projects.
- Developed industry-aligned syllabi and managed evaluations through ERP tools.

Executive Quality Assurance Engineer

[2010/10 – 2012/12]

Aboni Textiles Limited, Dhaka, Bangladesh (2.3 years)

- Formulated recipes and improved production processes for diverse fabric types.
- Ensured quality control, material selection, and customer satisfaction.
- Streamlined workflows and resolved production issues, increasing client satisfaction and revenue.



Education

2017-01 – 2019-12	Doctor of Philosophy (Ph.D.): Materials Science The University of Alabama, Tuscaloosa, AL, USA
2015-08 – 2016-12	Master of Science (M.Sc.): Human Environmental Sciences The University of Alabama, Tuscaloosa, AL, USA
2005-07 – 2011-07	Bachelor of Science (B.Sc.): Textiles Technology Bangladesh University of Textiles, Dhaka, Bangladesh
2001-01 – 2005-05	Vocational (V.Tech.): Building Construction & Maintenance (Civil Engineering) Bangladesh Technical Education Board, Dhaka, Bangladesh



Accomplishments

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- ➔ *Paper of Distinction Award (2021)* by International Textile and Apparel Association, ITAA.
 - ➔ *Research and Teaching Awards (2020)* by ITAA.
 - ➔ *Graduate Council Writing Fellowship (2019)* at The University of Alabama (UA).
 - ➔ *Outstanding Graduate Student Award (2019)* by UA.
 - ➔ *Joan Laughlin Fellowship Outstanding Continuing Doctoral Student Award (2018)* by ITAA.



Additional Qualifications

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- **Publications:** 22 peer-reviewed papers, 17 as the 1st author with 250+ citations. [Google Scholar link](#).
 - **Hands-on Skills:** SEM, EDS, EBSD, FIB/PIPS, TEM, APT, XRD, FTIR, Raman, Spectrophotometry, UV-Vis, DMA, Rheology, DSC, TGA, Wire EDM, Powder Metallurgy, Nanotechnology.
 - **Software Skills:** SolidWorks, AutoCAD, SketchUp, WeaveDesign, ChemDraw, Matlab, Minitab, Origin Pro, SPSS, MS Office Suite, Adobe Suite, FL studio.
 - **Hobbies:** Pianist, Guitarist, Songwriter, Composer, and Singer. Youtube Channel: [Dr. BPR](#)



Certification

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- **Lean Six Sigma** White Belt Certified by Management & Strategy Institute (MSI) – Cert.# 299533217.
 - **Industrial Safety Training** by the Office of Environmental Health and Safety, The University of Alabama.



Selected Scientific Publications

1. **Rocky**, B. P., & Thompson, A. J. (2021). Analyses of the Chemical Compositions and Structures of Four Bamboo Species and their Natural Fibers by Infrared, Laser, and X-ray Spectroscopies. *Fibers and Polymers*, 22(4), 916–927. <https://doi.org/10.1007/s12221-021-0303-8>
2. **Rocky**, B. P., & Thompson, A. J. (2021). Characterization of the crystallographic properties of bamboo plants, natural and viscose fibers by X-ray diffraction method. *Journal of the Textile Institute*, 112(8), 1295–1303. <https://doi.org/10.1080/00405000.2020.1813407>
3. **Rocky**, B. P., Weinberger, C. R., Daniewicz, S. R., & Thompson, G. B. (2021). Carbide nanoparticle dispersion techniques for metal powder metallurgy. *Metals*, 11(6), 871. <https://doi.org/10.3390/met11060871>
4. **Rocky**, B. P. (2022). An Investigation of Charging Effects by Different Factors on Carbon and Natural Bamboo Fibers in High-Resolution Scanning Electron Microscopic Imaging. *Journal of Natural Fibers*, 19(1), 145–158. <https://doi.org/10.1080/15440478.2020.1731906>
5. **Rocky**, A. B. P., & Molla, M. T. I. (2019). Interaction of the Qualities and Properties between Yarns and Fabrics. *Journal of American Science*, 15(6), 69–77. <https://doi.org/10.7537/marsjas150619.10>
6. **Rocky**, B. P., & Thompson, A. J. (2021). Investigation and comparison of antibacterial property of bamboo plants, natural bamboo fibers and commercial bamboo viscose textiles. *Journal of the Textile Institute*, 112(7), 1159–1170. <https://doi.org/10.1080/00405000.2020.1807300>
7. Wimberley, V. S., & **Rocky**, B. P. (2022). Investigation of the Extraction Processes and Performance Properties of Kudzu Fibers. *Journal of Natural Fibers*, 19(4), 1449–1460. <https://doi.org/10.1080/15440478.2020.1776664>
8. **Rocky**, B. P., & Thompson, A. J. (2021). Strategies of the Online Bamboo Viscose Clothing and Textiles Retailers. *Current Trends in Fashion Technology & Textile Engineering*, 7(3), 049–058. <https://doi.org/10.19080/CTFTTE.2021.07.555713>
9. **Rocky**, A. B. P. (2015). Interaction of some properties among yarns and jersey, rib, and interlock knit fabrics. *AATCC Review*, 15(4), 46–53. <https://doi.org/10.14504/ar.15.4.3>
10. **Rocky**, A. B. P. (2012). Comparison of Effectiveness Between Conventional Scouring & Bio-Scouring On Cotton Fabrics. *International Journal of Scientific & Engineering Research*, 3(8), 1–5. www.ijser.org/paper/Comparison-of-Effectiveness-Between-Conventional-Scouring-BioScouring-On-Cotton-Fabrics.html
11. **Rocky**, B. P., & Thompson, A. J. (2020). Production and Modification of Natural Bamboo Fibers from Four Bamboo Species, and Their Prospects in Textile Manufacturing. *Fibers and Polymers*, 21(12), 2740–2752. <https://doi.org/10.1007/s12221-020-1208-7>
12. **Rocky**, B. P., & Thompson, A. J. (2019). Production of natural bamboo fiber—2: Assessment and comparison of antibacterial activity. *AATCC Journal of Research*, 6(5), 1–9. <https://doi.org/10.14504/ajr.6.5.1>
13. **Rocky**, B. P., & Thompson, A. J. (2018). Production of natural bamboo fibers-3: SEM and EDX analyses of structures and properties. *AATCC Journal of Research*, 5(6), 27–35. <https://doi.org/10.14504/AJR.5.6.4>
14. **Rocky**, B. P., & Thompson, A. J. (2018). Production of natural bamboo fibers-1: experimental approaches to different processes and analyses. *Journal of the Textile Institute*, 109(10), 1381–1391. <https://doi.org/10.1080/00405000.2018.1482639>



Selected Conference Proceedings as Speaker

1. **Rocky**, B. P., et al. (2022). Mechanical Property Alterations through Hydrogen Trapping by Nanocarbide Dispersions in Steels. *MS&T22: Materials Science & Technology - Steels for Sustainable Development*, Pittsburgh, PA, USA.
2. **Rocky**, B. P., et al. (2021). Dispersing Tailored Nanoparticles through Powder Metallurgy Consolidation. At *MS&T21: Materials Science & Technology*, Columbus, Ohio, USA.
3. **Rocky**, B. P., et al. (2020). How is Vague Language Being Used in Retail Websites for Bamboo Viscose Products? At Regent's University London, *Sustainability in Fashion - ITAA Proceedings*, London, UK.
4. **Rocky**, B. P., et al. (2020). Modified Techniques to Detect Antibacterial Activity of Bamboo and Natural Bamboo Fiber (NBF). *International Textile and Apparel Association (ITAA) 2020 Virtual Annual Conference*.
5. **Rocky**, B. P., et al. (2018). Investigation of the Extraction Processes and Performance Properties of Kudzu Fibers. At *International Textile and Apparel Association (ITAA) Annual Conference*, Cleveland, Ohio.
6. **Rocky**, A. B. P., et al. (2017). Production of Ecofriendly Natural Bamboo Bast Fiber and Assessment of Antibacterial Activity. At *International Textile and Apparel Association (ITAA) Annual Conference*, St. Petersburg, Florida.