

Dr. Shasanka Sekhar Borkotoky

Correspondence Address

Dr. Shasanka Sekhar Borkotoky
Near Kali Mandir
Rangagora Road, Borguri P.O.,
Tinsukia, Dist: Tinsukia
Assam, India, 786126
Contact No: +91-9706847075
Email: shasankaborkotoky@gmail.com



Educational Qualification

Examination	Discipline/ Specialization	Institute/University	Year of Passing	% or CGPA (out of 10)
10 th	General	SEBA	2002	81.8
12 th	Science	Salt Brook Academy/AHSEC	2004	64.4
B. Tech.	Chemical Engineering	VTU, Belgaum	2009	73.1
M. Tech	Polymer Science and Technology	Tezpur University	2013	8.3/10
Ph.D.	Chemical Engineering	IIT Guwahati	2019	NA

Area of Interest

- **Polymer Science and Technology**
- **Bio based and biodegradable plastics**
- **Thermal and crystallization kinetics**
- **Degradation studies**

Projects Undertaken

Project completed for the award of M.Tech degree:

1. Modification of Bitumen by Waste Polymer and Nano Fly Ash (6 months).
2. Hyperbranched Poly (ester amide)/Functionalized Fly Ash Nanocomposites (6 months).

PhD Project:

Studies on Poly (lactic acid) Based Microcellular Biocomposite Foams.

List of Publications (Journals/Book Chapters)

1. **S. S. Borkotoky**, P. Dhar and V. Katiyar. "Biodegradable poly (lactic acid)/Cellulose nanocrystals (CNCs) composite microcellular foam: Effect of nanofillers on foam cellular morphology, thermal and wettability behavior." *International Journal of Biological Macromolecules* 106 (2018): 433-446. (**Elsevier, Impact Factor: 5.2**)
2. **S. S. Borkotoky**, G. Chakraborty and V. Katiyar. "Thermal degradation behaviour and crystallization kinetics of poly (lactic acid) and cellulose nanocrystals (CNC) based microcellular composite foams." *International Journal of Biological Macromolecules* 108 (2018): 1518-1531. (**Elsevier, Impact Factor: 5.2**)
3. **S. S. Borkotoky**, A. K. Pal and V. Katiyar. "Poly (lactic acid)/Modified Chitosan based Nanocomposite Foams: Non-isothermal Crystallization and Thermal Degradation Kinetics with Wettability and Porosimetric Investigations." *Journal of Applied Polymer Science (JAPS)*, 47236, 2018. (**Wiley, Impact Factor: 2.5**)
4. **S. S. Borkotoky**, T. Ghosh, P. Bhagabati and V. Katiyar. "Poly (lactic acid)/Modified Gum Arabic (MG) based microcellular composite foam: Effect of MG on foam properties, thermal and crystallization behavior." *International Journal of Biological Macromolecules* 125 (2019), 159-170. (**Elsevier, Impact Factor: 5.2**)
5. Narendren S., **S. S. Borkotoky**, and V. Katiyar, book chapter titled as "Up to date Advances of Biobased and Biodegradable Polymers in Food Packaging" in book 'Bio-based Plastics for Food Packaging Applications'. (**Smithers Rapra, ISBN: 9781910242582**)
6. T. Ghosh, **S. S. Borkotoky**, V. Katiyar (2019) Green Composites Based on Aliphatic and Aromatic Polyester: Opportunities and Application. In: V. Katiyar, R. Gupta, T. Ghosh (Eds) *Advances in Sustainable Polymers. Materials Horizons: From Nature to Nanomaterials*. Springer, Singapore. (**Springer, Singapore, ISBN: 978-981-32-9803-3**)
7. **S. S. Borkotoky**, T. Ghosh, V. Katiyar (2019) Biodegradable Nanocomposite Foams: Processing, Structure, and Properties. In: *Advances in Sustainable Polymers. Synthesis, Fabrication and Characterization. Materials Horizons: From Nature to Nanomaterials*. Springer, Singapore. (**Springer, Singapore, ISBN: 978-981-15-1250-6**)
8. **S. S. Borkotoky**, T. Ghosh, R. Patwa, V. Katiyar, Microcellular Foaming of Silk Nanocrystal (SNC) Reinforced Poly (lactic acid) based Biocomposites: Influence on Porous Structure, Crystallinity, Thermomechanical and Surface Property. (**Under Revision**)

List of Papers Presented in Conferences

1. **S. S. Borkotoky** and V. Katiyar, V. Fabrication of Tuneable Biodegradable Polymeric Foams, Chemcon 2015, 27-30 December, 2015, Guwahati, India.
2. **S. S. Borkotoky** and V. Katiyar, V. Effect of Chitosan and Cellulose Nanocrystals in the Surface Morphology and Wetting of Biodegradable Poly(lactic acid) Foams, *Advances in Sustainable Polymers(ASP-2016)*, August 3-6, 2016, Kyoto, Japan.
3. **S. S. Borkotoky** and V. Katiyar, Surface Wettability Behaviour of Functionalized-Gum Arabic Dispersed Poly (lactic acid) Bionanocomposite Foams, Macro 2017, January 9-11, 2017, Thiruvananthapuram, Kerala, India.

4. **S. S. Borkotoky**, R. Patwa and V. Katiyar, Effect of silk nanoparticles on thermal and wetting behaviour of poly (lactic acid) based foams. International Conference on Sophisticated Instruments in Modern Research, IIT Guwahati, 30 June-1 July 2017.
5. **S. S. Borkotoky** and V. Katiyar, “*Thermal Degradation Behaviour of PLA/CNC based Porous Microcellular Composite Foams.*” Indo-Japan Bilateral Symposium on Future Perspective of Bioresource Utilization in North-East India, IJBS-17, February 1-4, 2018
6. **S. S. Borkotoky**, T. Ghosh and V. Katiyar, “*Biodegradable Polylactic acid/ Modified Gum Arabic (MG) based Microcellular Composite Foam: Effect of MG on Foam properties and Thermal Behaviour.*” International Symposium on Advances in Sustainable Polymers, ASP-17, January 8-11, 2018

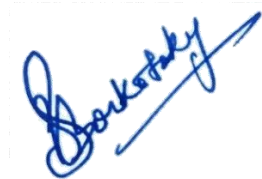
Instrument Handling Experience

1. DSC, TGA, Hyphenated TGA-IR, Contact Angle Analyzer, GPC, High Pressure Reactor and FTIR.
2. Instruments used for research purpose DSC, XRD, TGA-IR, Contact Angle, TGA, FTIR, DMA, XRD, AFM and TEM.
3. Foam fabrication using- Chitosan (CS), Poly (Lactic Acid), Cellulose Nanocrystals, Silk Nanocrystals, Gum Arabic

Membership in Professional Bodies

Lifetime membership of The Society of Polymer Science, India (SPSI)

I certify that the particulars furnished above are true in all respects based on my best knowledge and believe.



Dated: 05/03/2020

(Dr. Shasanka Sekhar Borkotoky)