Amar K. MOHANTY, Ph.D

FAIChE, FSPE, FRSC(UK), FIIChE

Distinguished Research Excellence Chair in Sustainable Materials

Director, Bioproducts Discovery & Development Centre (BDDC)

Professor of Bioproducts, Department of Plant Agriculture

Professor of Biological Engineering, School of Engineering

Editor-in-Chief of Sustainable Composites, Composites Part C - Open Access

University of Guelph, Guelph, Ontario, N1G 2W1

E-MAIL: mohanty@uoguelph.ca **PHONE:** 519 824 4120 Ext.: 56664

www.bioproductscentre.com

www.plant.uoguelph.ca/research/homepages/amohanty/

EDUCATION AND DEGREES

Ph.D. Utkal University	Chemistry Area: Polymers & Natural Fibers	1987
M.Sc. Utkal University	Chemistry; Specialization: Polymer Chemistry	1980
B.Sc. Utkal University	Chemistry Honours with Distinction	1978

POSITIONS HELD

2024–Present	**Distinguished Research Excellence Chair in Sustainable Materials**, University of Guelph and Competitive Green Technologies, Canada
2008–Present	**Professor,** Department of Plant Agriculture and School of Engineering (Cross-appointed), University of Guelph, Canada
2008–Present	**Director,** Bioproducts Discovery & Development Centre (BDDC), Canada
2020–2023	**OAC Distinguished Research Chair in Sustainable Biomaterials** University of Guelph, Canada
2008–2020	**Premier's Research Chair in Biomaterials & Transportation**, University of Guelph, Canada
2003–2008	**Associate Professor,** Michigan State University, USA
2001–2003	**Visiting Associate Professor,** Michigan State University, USA
2000–2001	**Visiting Research Associate,** Michigan State University, USA
1999–1999	**Post-Doctoral Associate,** Iowa State University, USA
1998–1999	**Alexander von Humboldt Fellow,** Technical University of Berlin, Germany
1987–1997	**Lecturer & Senior Lecturer (Chemistry),** Government Colleges affiliated with Berhampur & Utkal University, India

RESEARCH IMPACT

Google Scholar Citations: 61,531 citations, h-index of 115, and i10-index of 506 (November 5, *2024*)

- 501 peer-reviewed journal papers (including accepted/in press papers)
- 71 Patents (awarded/applied)
- 10 licenses (7 active licenses)
- 6 edited books and 30 book chapters
- 169 Plenary/Keynote/Invited research presentations
- 405 Conference Presentations (Presented by Trainees)
- 6 commercial products in the market
- $35.8 M in research and infrastructure funding from 2008 to September 2024

CURRENT RESEARCH AREAS

Biobased Materials, Renewable Resource-Based Materials, Natural Fiber Composites, Biodegradable and Biobased Polymers, Nanoblends, Nanocomposites, Value-Added Biomaterials from the Byproducts and Coproducts of the Biofuel Industries (Advanced Biorefinery), Recyclability, Durability and Biodegradability Studies of Bioplastics and Biobased Materials, Biomass and Biomaterials Sustainability, Pyrolysis of Biomass and Waste Streams, 3D Printed Biobased Materials, Biocarbon-Based Biocomposites, Circular Economy.

TRAINING AND SUPERVISORY EXPERIENCE

Table 1: Total HQP Supervised/Co-supervised/Academic advisory (*November 5, 2024*)

Trainee	Previous	Current	Lifetime Total
Undergraduate	72	6	78
Master's	37	3	40
PhD	22	6	28
Postdoc/Research Associate	66	6	72
Visiting Students and Scholars	28	6	34
Staff and Technicians	16	6	22
TOTAL	**241**	**33**	**274**

AWARDS, HONOURS AND DISTINCTIONS

2024 – Present **Distinguished research Excellence Chair in Sustainable Materials**
2023 – Present **Fellow**, Indian Institute of Chemical Engineers (IIChE)
2022 **RSC Miroslaw Romanowski Award Lecture**, Royal Society of Canada, Canada
2022 **Prof. Dr. Gokulananda Mahapatra Oration Award**, Prof. Dr. Gokulananda Nityananda Mahapatra Foundation, India
2021 **Miroslaw Romanowski Medal,** Royal Society of Canada, Canada
2020 – Present **Fellow**, Royal Society of Canada, Canada
2020 – Present **OAC Distinguished Research Chair in Sustainable Biomaterials**, University of Guelph, Canada
2020 **JL White Innovation Award**, Polymer Processing Society, USA
2019 **Biju Patnaik Award for Scientific Excellence**, Odisha Bigyan Academy, India
2019 **OAC Alumni Distinguished Researcher Award**, University of Guelph, Canada
2019 – Present **Fellow**, Royal Society of Chemistry, UK
2019 – Present **Fellow**, Society of Plastics Engineers, USA
2018 – Present **Fellow**, American Institute of Chemical Engineers, USA.
2018 **NSERC Synergy Award for Innovation**, Natural Sciences and Engineering Research Council, Canada
2017 – 2020 **Research Leadership Chair Award**, University of Guelph, Canada
2017 **Highly Prolific Author**, American Chemical Society (ACS) Sustainable Chemistry & Engineering, USA
2017 **Featured Canadian Author**, Selected for ACS Publications Open Access Virtual Issue "Hot Materials in a Cool Country" - articles authored by Canadians to celebrate the 100th Canadian Chemistry Conference

2016 **University of Guelph's Innovation of the Year Award,** Canada.

	For the creation of the 100% Compostable Bio-composite Resin; additional awards for this innovation at: http://purpod100.com/awards/
2015	**Lifetime Achievement Award**, BioEnvironmental Polymer Society, USA
2012	**"Gold Medal" and Certificate**, International Conference on Composites Interfaces, (Interface21).
2011	**Jim Hammar Memorial Service Award**, BioEnvironmental Polymer Society, USA
2011 – 2015	**5 Year Visiting Professorship**, South China University, China
2008 – 2020	**Premier's Research Chair in Biomaterials & Transportation**, University of Guelph, Canada (Endowed Research Chair awarded for 12 years)
2006	**Andrew Chase Forest Products Division Award**, American Institute of Chemical Engineers, USA
2007 – Present	**Director/Executive Committee Member**, American Institute of Chemical Engineers: Forest Product Division, USA
1999	**Prof. R. C. Tripathy Memorial Award** (Young Scientist Award), Orissa Chemical Society
1998 – 1999	**Alexander von Humboldt (AvH) Fellowship**, AvH Foundation, Germany
1980	**Gold medal**, Utkal University, Orissa being 1st Class 1st in M.Sc (Chemistry)

Top 12 Most Cited Publications (ref. Google Scholar Citations, *November 5, 2024*)

1. **Mohanty, A.K.**, Misra, M., & Hinrichsen, G. (2000). "Biofibres, biodegradable polymers and biocomposites: an overview". *Macromolecular Materials and Engineering*, 276(1), 1-24. ***Cited by 4077***.
2. **Mohanty, A.K.**, Misra, M., & Drzal, L.T. (2002). "Sustainable bio-composites from renewable resources: opportunities and challenges in the green materials world". *Journal of Polymers and the Environment*, 10(1-2), 19-26. ***Cited by 2958***.
3. Joshi, S.V., Drzal, L.T., **Mohanty, A.K.**, Arora, S. (2004). "Are natural fiber composites environmentally superior to glass fiber reinforced composites?". Composites Part A: Applied science and manufacturing 35 (3), 371-376. ***Cited by 2865***.
4. **Mohanty, A.K.**, Misra, M., & Drzal, L.T. (2005). "Natural Fibers, Biopolymers and Biocomposites". *CRC Press*. ***Cited by 2746***.
5. **Mohanty, A.K.**, Misra, M., & Drzal, L.T. (2001). "Surface modifications of natural fibers and performance of the resulting biocomposites: an overview". *Composite Interfaces*, 8(5), 313-343. ***Cited by 1393***.
6. Reddy, M.M., Vivekanandhan, S., Misra, M., Bhatia, S. K., & **Mohanty, A.K.** (2013). "Biobased plastics and bionanocomposites: Current status and future opportunities". *Progress in Polymer Science*, 38(10), 1653-1689. ***Cited by 1260***.
7. Mishra, S., **Mohanty, A.K.,** Drzal, L.T., Misra, M., Parija, S., Nayak, S. K., & Tripathy, S.S. (2003). "Studies on mechanical performance of biofibre/glass reinforced polyester hybrid composites". *Composites Science and Technology*, 63(10), 1377-1385. ***Cited by 1166***.
8. Huda, M.S., Drzal, L.T., **Mohanty, A.K.**, & Misra, M. (2008). "Effect of fiber surface-treatments on the properties of laminated biocomposites from poly (lactic acid) (PLA) and kenaf fibers". *Composites Science and Technology*,68(2), 424-432. ***Cited by 877***.
9. Nagarajan, V., **Mohanty, A.K.,** & Misra, M. (2016). "Perspective on polylactic acid (PLA) based sustainable materials for durable applications: Focus on

toughness and heat resistance", *ACS Sustainable Chemistry & Engineering*, 4(6), 2899-2916. ***Cited by 871***.

10. **Mohanty, A.K.**, Vivekanandhan, S., Pin, J.M., Misra, M. (2018). "Composites from renewable and sustainable resources: Challenges and innovations". Science 362 (6414), 536-542. ***Cited by 828***.
11. Rout, J., Misra, M., Tripathy, S.S., Nayak, S.K., & **Mohanty, A.K.** (2001). "The influence of fibre treatment on the performance of coir-polyester composites". *Composites Science and Technology*, 61(9), 1303-1310. ***Cited by 686***.
12. Meereboer, K. W., Misra, M., & **Mohanty, A. K.** (2020). Review of recent advances in the biodegradability of polyhydroxyalkanoate (PHA) bioplastics and their composites. *Green Chemistry*, *22*(17), 5519-5558. ***Cited by 671***.

LIST OF GRANTED PATENTS

1. **Mohanty, A.K.**, Drzal, L.T., Rook, B.P., & Misra, M. "Environmentally Friendly PolyLactide-Based Composite Formulations". Publication Number: US6869985B2.
2. **Mohanty, A.K.**, Drzal, L.T., Rook, B.P., & Misra, M. "Environmentally Friendly PolyLactide-Based Composite Formulations". Publication Number: EP1361039B1.
3. Dwan'Isa, J.P.L., Drzal, L.T., **Mohanty, A.K.**, & Misra, M. "Polyol Fatty Acid Polyesters Process and Polyurethanes Therefrom". Publication Number: US7125950B2.
4. **Mohanty, A.K.**, Drzal, L.T., Rook, B.P., & Misra, M. "Environmentally Friendly PolyLactide-Based Composite Formulations". Publication Number: DK1361039T3.
5. Drzal, L.T., Mehta, G., Misra, M., **Mohanty, A.K.**, & Thaer, K. "Biocomposites Sheet Molding and Methods of Making Those". Publication Number: US7208221B2.
6. Burgueno, R., **Mohanty, A.K.**, & Quagliata, M.J. "Hybrid natural-fiber composites with cellular skeletal structures". Publication Number: US7232605B2.
7. **Mohanty, A.K.**, Drzal, L.T., Park, H., Misra, M., & Wibowo, A.C. "Compositions of Cellulose Esters and Layered Silicates and Process for the Preparation Thereof". Publication Number: US7253221B2.
8. **Mohanty, A.K.**, Drzal, L.T., Rook, B.P., & Misra, M. "Environmentally Friendly PolyLactide-Based Composite Formulations". Publication Number: DE60307536T2.
9. **Mohanty, A.K.**, Drzal, L.T., Rook, B.P., & Misra, M. "Environmentally Friendly PolyLactide-Based Composite Formulations". Publication Number: US7256223B2.
10. **Mohanty, A.K.**, Drzal, L.T., Rook, B.P., & Misra, M. "Floor Covering Made from an Environmentally Friendly Polylactide-Based Composite Formulation". Publication Number: US7354656B2.
11. **Mohanty, A.K.** & Parulekar, Y. "Methods of making nanocomposites and compositions of rubber toughened polyhydroxyalkanoates". Publication Number: US7420011B2.
12. Drzal, L.T., **Mohanty, A.K.**, Liu, W., Thayer, K., & Misra, M. "Cellulosic Biomass Soy Flour Based Biocomposites and Process for Manufacturing Thereof". Publication Number: US7576147B2.
13. **Mohanty, A.K.** & Bhardwaj, R. "Hyperbranched polymer modified biopolymers, their biobased materials and process for the preparation thereof". Publication Number: US7579413B2.
14. **Mohanty, A.K.**, Tummala, P., Misra, M., & Drzal, L.T. "Filler Reinforced Thermoplastic Compositions and Process for Manufacture". Publication Number: US7582241B2.

15. **Mohanty, A.K.**, Parulekar, Y., Chidambarakumar, M., Kositruangchai, N., & Harte, B.R. “Biodegradable polymeric nanocomposite compositions particularly for packaging”. Publication Number: US7619025B2.
16. **Mohanty, A.K.**, Wu, Q., & Singh, A. “Bioadhesive from distillers' dried grains with solubles (DDGS) and the methods of making those”. Publication Number: US7618660B2.
17. **Mohanty, A.K.**, Selke, S., & Wu, Q. “Novel “green” materials from soy meal and natural rubber blends”. Publication Number: US7649036B2.
18. **Mohanty, A.K.**, Wu, Q., & Singh, A. “Bioadhesive from distillers' dried grains with solubles (DDGS) and the methods of making those”. Publication Number: US7837779B2.
19. **Mohanty, A.K.**, Drzal, L.T., Rook, B.P., & Misra, M. “Environmentally Friendly PolyLactide-Based Composite Formulations”. Publication Number: CA2427012C.
20. **Mohanty, A.K.**, Misra, M., & Sahoo, S. “Lignin Based Materials and Methods of Making Those”. Publication Number: US9309401B2.
21. Misra, M., Vadori, R. & **Mohanty, A.K.** “Bio-Based Acrylonitrile Butadiene Styrene (ABS) Polymer Compositions and Methods of Making and Using Thereof”. Publication Number: US9562156B2.
22. **Mohanty, A.K.**, Misra, M., Rodriguez-Uribe, A., & Vivekanadhan, S. “Hybrid Sustainable Composites and Methods of Making and Using Thereof”. Publication Number: US9809702B2.
23. **Mohanty, A.K.**, Yuryev, Y., & Misra, M. “Durable high performance heat resistant polycarbonate (PC) and polylactide (PLA) blends and compositions and methods of making those”. Publication Number: US9920198B2.
24. **Mohanty, A.K.**, Misra, M., Bali, A., & Rodriguez-Uribe, A. “Renewable Replacements for Carbon Black in Composites and Methods of Making and Using Thereof”. Publication Number: US10414880B2.
25. **Mohanty, A.K.**, Misra, M., Behazin, E., & Rodriguez-Uribe, A. “Toughened polyolefin and biocarbon based light weight biocomposites and method of making the same”. Publication Number: US10472440B2.
26. **Mohanty, A.K.**, Misra, M., Vivekanandhan, S., Gonugunta, P., Wang, T., Rodriguez-Uribe, A., Tiessen, M., & Bali, A. “Methods for creation of sub-micron biocarbon materials from biomass and their fields of application”. Publication Number: US11332371B2.
27. **Mohanty, A.K.**, Misra, M., & Wu, F. “Biodegradable nanostructured composites”. Publication Number: US11279823B2.
28. **Mohanty, A.**, Misra, M., Ogunsona, E.O., Anstey, A.J., Torres Galvez, S.E., Codou, A.M.F.M.S., & Jubinville, D.F. “Biocarbon and nylon based hybrid carbonaceous biocomposites and methods of making those and using thereof”. Publication Number: US10669420B2.