Banchamlak Bemerw Kassaun

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Professional Summary

Dedicated and innovative Engineer with a PhD in Biotechnology, specializing in biomass utilization for synthesizing biopolymers for coating and 3D printing. Holds an MSc in Leather Engineering, providing a unique interdisciplinary perspective on material science and engineering. Over 7 years of combined academic and research experience focused on biopolymer synthesis, utilization, quality control, project management, and chemical process development within research laboratories and lecturing.

Proven track record of conducting groundbreaking research, including developing sustainable biopolymers for advanced applications such as coatings and 3D printing. Skilled in conducting economic and technical feasibility studies, designing and testing chemical processing equipment, and ensuring compliance with health and safety regulations. Experienced in supervising laboratory and proficient in analytical techniques and various computer technologies.

Education

Biotechnology, Ph.D. 2020 – 2024
Lakehead University – Thunder Bay, ON
Leather Engineering, MSc., 2017 – 2019
Bahir Dar University – Bahir Dar, Ethiopia
Leather Engineering, BSc, 2012 – 2017
Bahir Dar University – Bahir Dar, Ethiopia

Professional experience:

Researcher
Lakehead University, Thunder Bay, Ontario, Canada
[Sep/2020] – Present

- Planned and executed sustainable chemical reactions, identifying and solving complex biopolymer (i.e. lignin) development problems.
- Applied green chemistry principles to minimize environmental impact and enhance the sustainability of chemical processes.
- Designed, developed, tested, and optimized biopolymer coating formulations.
- Designed, developed, tested, and optimized filament extrusion (FDM)- three-dimensional (3D) printable biopolymer.
- Managed multiple research projects, coordinating tasks and timelines to achieve project goals efficiently.
- Utilized advanced product and process optimization tools.
- Supervised laboratory activities and ensured health and safety regulations were followed.

Student mobility

Åbo Akademi, Turku, Finland

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[Sep 2023-Jan 2024]

- Oversaw critical aspects of extrusion processing, including thermal and mechanical property optimization.

Qilu University, Jinan, China

[Oct 2019-Jan 2020]

- Undertook the development of bio-based hydrogel synthesis and characterization.

Skills:

- **Biopolymer Formulation and Extrusion:** Expertise in developing, testing, and optimizing biopolymer blends for sustainable packaging applications.
- **Analytical Techniques:** Thermal analysis, mechanical analysis, NMR, XPS, SLS, rheometer
- **Computer and Technology Knowledge:** MS Excel, MS Office, MS Outlook, MS PowerPoint, MS Word, design expert, Endnote
- **Project Management:** Experience in managing research projects and coordinating tasks.
- **Industry Collaboration:** Hands-on experience in academic and industrial settings, focusing on sustainable biopolymer development.
- **Area of Specialization:** Industrial chemistry, Polymers synthesis

Publications

Banchamlak Bemerw Kassaun - Google Scholar

Presentation

- 17th European Workshop on lignocellulosic and Pulp (EWLP2024) Poster presentation
- 2024 Research and Innovation Week poster presentation

Personal Attributes

- Accurate
- Efficient interpersonal skills
- Excellent oral and written communication
- Team player

References

1. Professor Pedram Fatehi
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2. Professor Chunlin Xu
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