

Lam Tan Hao

Research Center for Bio-Based Chemistry, Korea Research Institute of Chemical Technology

E-mail: hvhao1093@gmail.com - Tel.: +82-10-8937-2804

Education

Mar 2018–Feb 2023	PhD	Korea Research Institute of Chemical Technology School, Korea University of Science and Technology	Advanced Materials and Chemical Engineering
Sept 2011–Feb 2016	BS	Biotechnology Research and Development Institute, Can Tho University (Vietnam)	Biotechnology

Work Experience

Mar 2023–present	Postdoctoral Researcher, Research Center for Bio-Based Chemistry, Korea Research Institute of Chemical Technology
July 2016–Jan 2018	Research Assistant, Biotechnology Research and Development Institute, Can Tho University (Vietnam)
Aug 2015–June 2016	Research Intern, Biotechnology Research and Development Institute, Can Tho University (Vietnam)

Publications

As a first/cofirst author († indicates equal contribution)

10. Ryu, J.,† **Hao, L.T.**,† Kim, H., Lee, S., Jeon, H., Hwang, D.S., Park, J., Park, C.H., Oh, D.X., Koo, J.M., Park, S.B. Biobased poly (ester amide)s as sustainable coating materials for vegan leather with improved haptic sensation. *ACS Sustainable Chemistry & Engineering* **2025**, *13*, 7585–7597.
9. **Hao, L.T.**, Lee, S., Hwang, D.S., Jeon, H., Park, J., Kim, H.J., Oh, D.X. Self-healing scaffolding technology with strong, reversible interactions under physiological conditions for engineering marbled cultured meat. *ACS Applied Materials & Interfaces* **2025**, *17*, 31881–31897.
8. **Hao, L.T.**,† Kim, S.,† Lee, M., Park, S.B., Koo, J.M., Jeon, H., Park, J., Oh, D.X. Next-generation all-organic composites: a sustainable successor to organic–inorganic hybrid materials. *International Journal of Biological Macromolecules* **2024**, *269*, 132129.
7. **Hao, L.T.**,† Ju, S.,† Hwang, D.K.,† Hwang, D.S., Ok, Y.S., Hwang, S.Y., Kim, H.J., Jeon, H., Park, J., Oh, D.X., Koo, J.M. Optimizing bioplastics translation. *Nature Reviews Bioengineering* **2024**, *2*, 289–304.
6. Lee, S.,† **Hao, L.T.**,† Park, J., Oh, D.X., Hwang, D.S. Nanochitin and nanochitosan: chitin nanostructure engineering with multiscale properties for biomedical and environmental applications. *Advanced Material* **2023**, *35*, 202203325.

5. **Hao, L.T.**,† Park, S.,† Choy, S.,† Kim, Y.-M., Lee, S.-W., Ok, Y.S., Koo, J.M., Hwang, S.Y., Hwang, D.S., Park, J., Oh, D.X. Strong, multifaceted guanidinium-based adhesion of bioorganic nanoparticles to wet biological tissue. *JACS Au* **2021**, *1*, 1399–1411.
4. **Hao, L.T.**, Lee, M., Jeon, H., Koo, J.M., Hwang, S.Y., Oh, D.X., Park, J. Tamper-proof time–temperature indicator for inspecting ultracold supply chain. *ACS Omega* **2021**, *6*, 8598–8604.
3. Thuy, V.T.T.,† **Hao, L.T.**,† Jeon, H., Koo, J.M., Park, J., Lee, E.S., Hwang, S.Y., Choi, S., Park, J., Oh, D.X. Sustainable, self-cleaning, transparent, and moisture/oxygen-barrier coating films for food packaging. *Green Chemistry* **2021**, *23*, 2658–2667.
2. **Hao, L.T.**,† Eom, Y.,† Tran, T.H., Koo, J.M., Jegal, J., Hwang, S.Y., Oh, D.X., Park, J. Rediscovery of nylon upgraded by interactive bio-renewable nanofillers. *Nanoscale* **2020**, *12*, 2393–2405.
1. Tran, T.H.,† Nguyen, H.-L.,† **Hao, L.T.**,† Kong, H., Park, J.M., Jung, S.-H., Cha, H.G., Lee, J.Y., Kim, H., Hwang, S.Y., Park, J., Oh, D.X. A ball milling-based one-step transformation of chitin biomass to organo-dispersible strong nanofibers passing highly time and energy consuming processes. *International Journal of Biological Macromolecules* **2019**, *125*, 660–667.

As a coauthor

8. Chung, S., Park, S.B., **Hao, L.T.**, Kim, H., Park, S.-A., Jeon, H., Hwang, D.S., Oh, D.X., Koo, J.M., Park, J. Extended shelf-life of biodegradable poly (butylene succinate-co-carbonate)/chitin nanowhisker-based bags. *Polymer Degradation and Stability* **2025**, *233*, 111185.
7. Kim, H.J., **Hao, L.T.**, Lee, G.-H., Choi, S.J., Chae, H.G., Oh, D.X., Kim, H., Eom, Y. All-natural water-resistant paper coated by chitosan nanowhiskers through hydrophilic-to-hydrophobic self-assembly. *Progress in Organic Coatings* **2023**, *182*, 107672.
6. Jung, H., Shin, G., Kwak, H., **Hao, L.T.**, Jegal, J., Kim, H.J., Jeon, H., Park, J., Oh, D.X. Review of polymer technologies for improving the recycling and upcycling efficiency of plastic waste. *Chemosphere* **2023**, *320*, 138089.
5. Jin, S.B., **Hao, L.T.**, Hwang, S.Y., Oh, D.X., Koo, J.M., Jeon, H., Park, S.B., Park, J. Masterbatch of chitosan nanowhiskers for preparation of nylon 6, 10 nanocomposite by melt blending. *Polymer* **2022**, *14*, 5488.
4. Thanh, T.V., **Hao, L.T.**, Cho, H.-Y., Kim, H. J., Park, S.-A., Lee, M., Jeon, H., Hwang, S.Y., Park, J., Oh, D.X., Koo, J.M. Sustainable poly(butylene adipate-co-furanoate) nanocomposites with sulfated chitin nanowhiskers: synergy leading to superior robustness and improved biodegradation. *ACS Sustainable Chemistry & Engineering* **2022**, *10*, 8411–8422.
3. Nguyen, H.-L., Tran, T.H., **Hao, L.T.**, Jeon, H., Koo, J.M., Shin, G., Hwang, D.S., Hwang, S.Y., Park, J., Oh, D.X. Bio-renewable, transparent, and oxygen/moisture barrier nanocellulose/nanochitin-based coating on polypropylene for food packaging applications. *Carbohydrate Polymers* **2021**, *271*, 118421.
2. Nguyen, H.-L., Ju, S., **Hao, L.T.**, Tran, T.H., Cha, H.G., Cha, Y.J., Park, J., Hwang, S.Y., Yoon, D.K., Hwang, D.S., Oh, D.X. The renewable and sustainable conversion of chitin into a chiral nitrogen-doped carbon-sheath nanofiber for enantioselective adsorption. *ChemSusChem* **2019**, *12*, 3232–3242.
1. Xa, T.V., **Hao, L.T.** Disease-reducing effects of aqueous leaf extract of *Kalanchoe pinnata* on rice bacterial leaf blight caused by *Xanthomonas oryzae* pv. *oryzae* involve induced resistance. *Physiological and Molecular Plant Pathology* **2017**, *100*, 57–66.

Oral presentations

4. **Hao, L.T.**, Park, S.-A., Kim, H.J. Hydrophobic surface modification of nanocellulose in an all-aqueous system. Annual Fall Meeting of the Polymer Society of Korea, 29 September–1 October, Busan Convention Center (BEXCO), Busan, South Korea (**Invited lecture**)
3. **Hao, L.T.**, Oh, D.X. *N*-Guanidinium-functionalized nanochitin as antibacterial adhesives for biological tissue. *Gordon Research Seminar Antimicrobial Host Defense Peptides: Biological Functions, Mechanisms of Action and Therapeutic Intervention*, 14–15 January 2023, Renaissance Tuscany Il Ciocco, Via Giovanni Pascoli, Lucca (Barga), Italy
2. **Hao, L.T.**, Hwang, S., Park, J., Oh, D.X. Sticky even wet: functionalized bio-nanoparticles as strong adhesives for hydrogels and biological tissues. *IUPAC-MACRO2020+ The 48th World Polymer Congress*, 16–20 May 2021, ICC Jeju, South Korea
1. **Hao, L.T.**, Hwang, S., Park, J., Oh, D.X. Synthesis of nylon 66 composites containing natural organic nanomaterials. *TAPPI 2019 International Nanotechnology Conference for Renewable Materials*, 3–7 June 2019, Makuhari Messe, International Conference Hall Chiba, Japan

Awards

- 2023 Korea Research Institute of Chemical Technology – Achievement Award
- 2023 National Research Council of Science and Technology (NST) Chairperson Award for Outstanding Researchers at Government-funded Research Institutes
- 2022 University of Science and Technology – Excellent Research Paper Award
- 2020 Korea Research Institute of Chemical Technology – Excellent Student Award
- 2018 University of Science and Technology – Excellent Student Award

Patents

6. Kim, H.J., Park, S.B., Oh, D.X., **Hao, L.T.**, Jegal, J., Park, J., Cell support for producing cultured meat and manufacturing method thereof. KR102893007B1
5. Kim, H.J., Ju, S., Oh, D.X., Jegal, J., Park, S.B., Jeon, H., **Hao, L.T.**, Antibacterial self-cleaning composite coating film. KR20250011388A
4. Oh, D.X., Hwang, S.Y., Park, J., **Hao, L.T.**, Jeon, H., Koo, J.M. Bioadhesive composition based on chitosan nanofibers modified with substituents containing guanidinium ions and preparation method thereof. KR102425132B1
3. Oh, D.X., Hwang, S.Y., Park, J., **Hao, L.T.**, Koo, J.M., Jeon, H. Chitosan nanofiber-based bioadhesive composition and preparation method thereof. KR102366564B1
2. Oh, D.X., Park, J., Hwang, S.Y., Cha, H.G., **Hao, L.T.**, Jeon, H., Tran, T.H., Eom, Y. Polyamide composite materials containing nanochitosan fiber in aqueous solution and method for preparing the same. KR102209966B1
1. Oh, D.X., Park, J., Hwang, S.Y., Cha, H.G., **Hao, L.T.**, Jeon, H., Tran, T.H., Eom, Y. Polyamide resin composition containing cationized nanochitosan fiber and method for preparing the same. KR102209960B1