CURRICULUM VITAE

Rattapol Pinnaratip

[1]Department of Industrial Engineering, Faculty of Engineering, and

[2]Biomedical Engineering Institute, Chiang Mai University

239 Huay Kaew Road., Suthep, Muang, Chiang Mai, Thailand 50200

E-mail: rattapol.pinn@cmu.ac.th

ACEDAMIC POSITION

2020-present Lecturer, Department of Industrial Engineering, Faculty of Engineering, Chiang Mai University

EDUCATION

2016-2020 **Michigan Technological University**, Houghton, MI, Department of Biomedical Engineering, Ph.D. in Biomedical Engineering

2012-2015 **Michigan Technological University**, Houghton, MI, Department of Biomedical Engineering, M.S., Biomedical Engineering

2007-2010 **Mahidol University**, Bangkok, Thailand, B.S., Biomedical Engineering

RESEARCH EXPERIENCE

2012-2020 **Graduate Research Assistant**, Michigan Technological University, Houghton, MI

2009-2010 **Laboratory Trainee Technician**, Ramathibodi Hospital Research Center, Bangkok, Thailand

2008-2010 **Undergraduate Research Assistant**, Mahidol University, Bangkok, Thailand

LEADERSHIP EXPERIENCE

2016-2018 **Vice-president**, Thai Student Association, Michigan Technological University, Houghton, MI

CONFERENCE

February 2021 Utilization of Hydrogen Peroxide in Catechol-Based Adhesive for Improved Dermal Wound Healing, **Samaggi Abstract Competition 2021**, Online Conference, London, UK.

July 2019 Regulation of Hydrogen Peroxide Concentration from Mussel-inspired Adhesive via Surface- modified Silica Particle Incorporation, **Gordon's Research Conference**, Mount Holyoke College, South Hadley MA, Poster Presentation

July 2019 Regulation of Hydrogen Peroxide Concentration from Mussel-inspired Adhesive via Surface- modified Silica Particle Incorporation, **Gordon's Research Seminar**, Mount Holyoke College, South Hadley MA, Podium and Poster Presentation

April 2019 Biomimetic Recyclable Microgels for On-demand Generation of Hydrogen Peroxide and Antipathogenic Application, **Society for Biomaterials**, Seattle WA, PodiumPresentation

April 2019 Regulation of Hydrogen Peroxide Generation from Mussel-inspired Adhesive via Silica Particle Incorporation, **Society for Biomaterials**, Seattle WA, Poster Presentation

September 2017

Regulation of Hydrogen Peroxide Generation from Mussel-inspired Adhesive via Silica Particle Incorporation, **Biomaterial Day**, University of Michigan, Poster Presentation

March 2017 Regulation of Hydrogen Peroxide Generation from Mussel-inspired Adhesive via Silica Particle Incorporation, **Upper Peninsula American Chemical Society Student Research Symposium**, Poster Presentation

HORNOR/AWARDS

2021 **First Place in the ENGINEERING & TECHNOLOGY category**, Samaggi Abstract Competition 2021

2020 Portage Health Foundation Graduate Assistantship for Spring 2020

2012-2018 **Thai Government Scholarship Recipient**

2017 First Prize, Biomaterial Day, University of Michigan, Poster Presentation, Novel Material Section

2017 Second Prize, Upper Peninsula American Chemical Society Student Research Symposium

PUBLICATIONS

1. **Pinnaratip, R.**, Lee, B.P., 2021. Oxidation Chemistry of Catechol Utilized in Designing Stimuli-Responsive Adhesives and Antipathogenic Biomaterials. *ACS Omega*, 6(8), pp.5113–5118.

2. **Pinnaratip, R.**, Forooshani, P.K., Li, M., Hu, Y.H., Rajachar, R.M. and Lee, B.P., 2020. Controlling the Release of Hydrogen Peroxide from Catechol-Based Adhesives Using Silica Nanoparticles. *ACS Biomaterials Science & Engineering*, 6(8), pp.4502-4511.

3. **Pinnaratip, R.**, Bhuiyan, M.S.A., Meyers, K., Rajachar, R.M. and Lee, B.P., 2019. Multifunctional biomedical adhesives. *Advanced healthcare materials*, 8(11), p.1801568.

4. **Pinnaratip, R.**, Meng, H., Rajachar, R.M. and Lee, B.P., 2018. Effect of incorporating clustered silica nanoparticles on the performance and biocompatibility of catechol-containing PEG-based bioadhesive. *Biomedical Materials*, 13(2), p.025003.

5. Jesadaporn, P., **Pinnaratip, R.**, Wattanutchariya, W., Formulation of Powdered Medical Food for Elderly with Frailty. *The Conference of Industrial Engineering Network (IE NETWORK 2021) Proceedings*, 5-7th May 2021, pp. 1086-1090.

6. Kord Forooshani, P., **Pinnaratip, R.**, Polega, E., Tyo, A.G., Pearson, E., Liu, B., Folayan, T.O., Pan, L., Rajachar, R.M., Heldt, C.L. and Lee, B.P., 2020. Hydroxyl Radical Generation through the Fenton-like Reaction of Hematin-and Catechol-Functionalized Microgels. *Chemistry of Materials*, 32(19), pp.8182-8194.

7. Zhang, W., Wang, R., Sun, Z., Zhu, X., Zhao, Q., Zhang, T., Cholewinski, A., Yang, F.K., Zhao, B., **Pinnaratip, R.**, Forooshani, P.K., and Lee, B.P., 2020. Catechol-functionalized hydrogels: biomimetic design, adhesion mechanism, and biomedical applications. *Chemical Society Reviews*, 49(2), pp.433-464.

8. Zhang, Z., **Pinnaratip, R.**, Ong, K.G. and Lee, B.P., 2019. Correlating the mass and mechanical property changes during the degradation of PEG-based adhesive. *Journal of Applied Polymer Science*, p.48451.

9. Forooshani, P.K., Polega, E., Thomson, K., Akream, M.S., **Pinnaratip, R.**, Trought, M., Kendrick, C., Gao, Y., Perrine, K.A., Pan, L. and Lee, B.P., 2019. Antibacterial Properties of Mussel-Inspired Polydopamine Coatings Prepared by Simple Two-Step Shaking-Assisted Method. *Frontiers in Chemistry*, 7, p.631.

10. Meng, H., Forooshani, P.K., Joshi, P.U., Osborne, J., Mi, X., Meingast, C., **Pinnaratip, R.**, Kelley, J., Narkar, A., He, W. and Frost, M.C., 2019. Biomimetic recyclable microgels for on-demand generation of hydrogen peroxide and antipathogenic application. *Acta Biomaterialia*, 83, pp.109-118.

11. Joseph, C.A., McCarthy, C.W., Tyo, A.G., Hubbard, K.R., Fisher, H.C., Altscheffel, J.A., He, W., **Pinnaratip, R.**, Liu, Y., Lee, B.P. and Rajachar, R.M., 2018. Development of an

injectable nitric oxide releasing poly (ethylene) glycol-Fibrin adhesive hydrogel. *ACS biomaterials science & engineering*, 5(2), pp.959-969.

12. Narkar, A.R., Kelley, J.D., **Pinnaratip, R.** and Lee, B.P., 2017. Effect of ionic functional groups on the oxidation state and interfacial binding property of catechol-based adhesive. *Biomacromolecules*, 19(5), pp.1416-1424.

13. Lin, M.H., Anderson, J., **Pinnaratip, R.**, Meng, H., Konst, S., DeRouin, A.J., Rajachar, R., Ong, K.G. and Lee, B.P., 2015. Monitoring the long-term degradation behavior of biomimetic bioadhesive using wireless magnetoelastic sensor. *IEEE Transactions on Biomedical Engineering*, 62(7), pp.1838-1842.

RESEARCH SUPPORT

On-going Research Support:

R000025869 January 1st, 2021 – January 1st, 2022

Chiang Mai University

Role: PI

R000025868 October 1st, 2020 – September 30th, 2021

Advanced Manufacturing and Management Technology Research Center: AM^{2}Tech #2021

Role: Co-PI

PROFESSIONAL ACTIVITIES

Journal Peer Review

Nature Communication; Small; Acta Biomaterialia; Macromolecules; Gels.