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EDUCATION

- Ph.D. in Chemical Engineering, Lehigh University, Bethlehem, Pennsylvania, 2003.
  Thesis: Regimes of Polyelectrolyte Dynamics at Solid/Liquid Interfaces, Advisor: Professor Maria M. Santore, Ph.D.
- M.S. in Chemical Engineering, Lehigh University, Bethlehem, Pennsylvania, 1998.
- B.E. in Chemical Engineering, King Mongkut's University of Technology, Bangkok, Thailand, 1995.

Job history

- Department of Chemical Engineering, Kasetsart University, Bangkok, Thailand, (July 2003 – present)

Research works

- Topical patch for drug delivery.
- Deproteinization of natural rubber latex.
- Prevulcanization of natural rubber and its applications.
- Improvement of product quality by using artificial neural network and optimization.
- Modification of natural rubber via grafting and blending: Kinetics, mechanical properties, and modeling.
- Chemical modification of polymers for proton-exchange membranes, catalyst, and enzyme immobilization.
- Investigation of synthesis of porous silica using a polymer template by means of manipulating the interfacial interactions between a template and silica sources.

PUBLICATIONS

- Sarilak, D., Kerdlap, W., Embley, B., Chisti, Y., **Hansupalak, N.** "Model-based design, synthesis and use of thermally insulating mortar formulations for energy conservation in buildings", Journal of Cleaner Production 276 (2020) 124287.
- Kerdlap, W., Thongpitak, C., Keawmaungkom, S., Warakulwit, C., Supaporn Klangprapan, Choowongkomon, W., Chisti, Y., **Hansupalak, N.** "Natural rubber as a template for making hollow silica spheres and their use as antibacterial agents", Microporous and Mesoporous Materials 273 (2019) 10–18.
- Phattharachindanuwong, C., **Hansupalak, N.**, Plank, J., Chisti, Y. "Template-assisted facile synthesis and characterization of hollow calcium silicate hydrate particles for use as reflective materials", Materials Research Bulletin, 97 (2018) 343-350.

- Jantawatchai, K., Jitpluem, S., Kerdlap, W., Phanawadeea, P., Warakulwit, C., Chisti, Y., **Hansupalak, N.** "Production and characterization of a novel hierarchical porous silica adsorbent for removal of methylene blue dye from wastewaters" Chemical Engineering Communications, 204 (2017) 1452-1465
- Wiroonpochit, P., Uttra, K., Jantawatchai, K., **Hansupalak, N.**, Chisti, Y. "Sulfur-Free Prevulcanization of Natural Rubber Latex by Ultraviolet Irradiation in the Presence of Diacrylates" Industrial & Engineering Chemistry Research, 56 (2017) 7217–7223.
- Phattharachindanuwong, C., **Hansupalak, N.**, Jantawatchai, K., Warakulwit, C., Plank, J., Chisti, Y. "Production and characterization of hierarchical porous silica made using natural rubber astemplate: Effects of the template removal methods,the pH of production, and the natural rubbersources" Chemical Engineering Research and Design 113 (2016) 273–283.
- **Hansupalak**, **N.**, Piromkraipak, P., Tamthirat, P., Manitsorasak, A., Sriroth, K., Tran, T. "Biogas reduces the carbon footprint of cassava starch: a comparative assessment with fuel oil" Journal of Cleaner Production Volume 134, Part B (2016) 539–546. Special Volume: Green and Sustainable Innovation for Cleaner Production in the Asia-Pacific Region
- Ong-on, I., Embley, B., Chisti, Y., **Hansupalak**, **N.**"Prediction of pore properties of hierarchical porous silica template on natural rubber" Microporous and Mesoporous Materials 233 (2016) 1–9.
- **Hansupalak, N.**, Srisuk,S., Wiroonpochit, P., Chisti, Y."Sulfur-Free Prevulcanization of Natural Rubber Latex by UltravioletIrradiation" Industrial & Engineering Chemistry Research, 55 (2016) 3974–3981.
- Sirirat, T., Vatanatham, T., **Hansupalak, N.**, Rempel, G.L., Arayapranee, W. "Kinetics and modeling of methyl methacrylate graft copolymerization in the presence of natural rubber latex" Korean Journal of Chemical Engineering, 32 (2015) 980–992.
- Sirirat, T., Vatanatham, T., **Hansupalak, N.**, Rempel, G.L., Arayapranee, W. "Kinetic study of styrene and methyl methacrylate emulsion polymerization induced by cumene hydroperoxide/tetraethylenepentamine" Journal of Polymer Research, 22 (2015) 16 (11 pages). DOI 10.1007/s10965-014-0643-9.
- Junoi, S., Chisti, Y., **Hansupalak, N.** "Optimal conditions for deproteinizing natural rubber using immobilized alkaline protease"Journal of Chemical Technology & Biotechnology, 90 (2015), 185–193.
- Phatharachindanuwong, C., **Hansupalak, N.**, Chareonpanich, M., Chisti, Y., Limtrakul, J., Plank, J. "Morphology and adsorption capacity of sodium silicate-based hierarchical porous silica template on natural rubber: Influence of washing–drying methods" Materials Letters, 130 (2014) 206–209.
- Prasertkittikul, S., Chisti, Y., **Hansupalak, N.** "Deproteinization of natural rubber using protease immobilized on epichlorohydrin crosslinked chitosan beads" Industrial & Engineering Chemistry Research, 52 (2013) 11723-11731.
- Songsing, K., Vatanatham, T., **Hansupalak, N.** "Kinetics and Mechanism of Grafting Styrene onto Natural Rubber in Emulsion Polymerization using Cumene Hydroperoxide–Tetraethylenepentamine as Redox Initiator" European Polymer Journal, 49 (2013) 1007–1016.
- Aroonsingkarat, K., **Hansupalak, N.** "Prediction of Styrene Conversion of Polystyrene/Natural Rubber Graft Copolymerization Using Reaction Conditions: Central Composite Design vs. Artificial Neural Networks" Journal of Applied Polymer Science, 128 (2013) 2283–2290.
- Sresungsuwan, N., **Hansupalak, N.** "Prediction of Mechanical Properties of Compatibilized Styrene/Natural-Rubber Blend by Using Reaction Conditions: Central Composite Design vs. Artificial Neural Networks" Journal of Applied Polymer Science, 127 (2013) 356–365.

- Srithong, S., Jiraratananon, R., **Hansupalak, N.** "A Simple Postsulfonation of Poly(arylene ether sulfone) Radel® R" Journal of Applied Polymer Science, 119 (2011) 973–976.
- Phompan, W., **Hansupalak, N.** "Improvement of proton-exchange membrane fuel cell performance using platinum-loaded carbon black entrapped in crosslinked chitosan" Journal of Power Sources, 196 (2011) 147–152.