DR. NURSHAFIZA SHAHABUDIN

Ph.D. Universiti Malaya, 2016 MSc. (Polymeric Materials & Dental Technology), 2011 BSc. (Hons) (Applied Chemistry), 2006 <u>nurshafiza.s@um.edu.my</u> +603-7967-5935



Research Interest

Polymeric Materials; Natural Polymer, Electrochemical Devices; Polymer Electrolytes; Microcapsules; Self-healing materials; Electrospun microcapsules.

Research Highlight

Current research focuses on the polymer electrolyte and fabrication of electrochromic devices. The preparation polymer electrolyte focuses on the usage of natural polymers. We also currently are interested in investigating the structure-property relationship of microcapsules produced from electrospun technique including the self-healing property of coating.



Figure: FESEM micrograph containing palm oil-based alkyd as healing agents for epoxy polymeric materials.

Representative Publications:

- Chua, K. Y., Azzahari, A. D., Abouloula, C. N., Sonsudin, F., Shahabudin, N., & Yahya, R. (2020). Cellulose-based polymer electrolyte derived from waste coconut husk: residual lignin as a natural plasticizer. *J Polym Res*, 27, 115 (Q2)
- Ahmad, M.H., Selvanathan, V., Azzahari, A.D., Sonsudin, F., Shahabudin, N., Yahya, R. The impact of acetylation on physical and electrochemical characteristics of cellulose-based quasi-solid polymer electrolytes. *J Polym Res* 27, 137 (2020) (Q2)
- **3.** Ataei, S., Hassan, A., Azari, P., Pingguan-Murphy, B., Yahya, R., Basirun, W. J., & **Shahabudin**, N. (2020). Electrosprayed PMMA microcapsules containing green soybean oil-based acrylated epoxy and a thiol: a novel resin for smart self-healing coatings. *Smart Materials and Structures*, *29*(8), 085037 (Q1)
- 4. Shahabudin, N., Yahya, R., Gan, S. N. 2016. Microcapsules Filled with a Palm Oil-Based Alkyd as Healing Agent for Epoxy Matrix. *Polymers* (Q1)
- 5. **Shahabudin, N**., Yahya, R., Gan, S.N. (2016) Microcapsules of Poly(urea-formaldehyde) (PUF) Containing alkyd from Palm Oil. *Materials Today: Proceedings* 3, pp. S88-S95. (Scopus)

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