

Curriculum Vitae

Name: Donruedee Toyen
Position: Researcher Practitioner
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EDUCATION

2019 M.Sc (Applied Radiation and Isotope), Kasetsart University, Thailand
2016 B.Sc (Radiation Bioscience), Kasetsart University, Thailand

PROFESSIONAL EXPERIENCE

2019 - present Scientific Equipment and Research Division, Kasetsart University, Thailand

AREA OF EXPERTISE

- Scanning electron microscope (SEM)
- Energy dispersive X-ray spectroscopy (EDS)
- Radiation shielding
- Radiation detection and protection
- Polymer processing

RESEARCH GRANT

As Head of Project:

2020 Development and surface modification of the samarium oxide in ultra-high molecular weight polyethylene composites for use in radiation shielding applications

As Co-Researcher

2020 Study and measurement of tritium level in environmental and tap water resources for the establishment of national water radioactivity database

2020 Innovative Technology on Shelf Life Extension and Transportation of Commercial Sea Grape (*Caulerpa lentillifera*)

- 2019 Development of x-ray and gamma shielding rubber gloves for healthcare workers
- 2019 Development of neutron shielding properties of UHMWPE/B₂O₃ and UHMWPE/Sm₂O₃

PUBLICATIONS

1. **Toyen, D** and K. Saenboonruang. (2017). "Development of paraffin and paraffin/bitumen composites with additions of B₂O₃ for thermal neutron shielding applications." Journal of Nuclear Science and Technology. 54(8): 871-877.
2. **Toyen, D.**, A. Rittirong, W. Poltabtim and K. Saenboonruang. (2017). "Flexible, lead-free, gamma-shielding materials based on natural rubber/metal oxide composites." Iranian Polymer Journal. 27(1): 33-41.
3. **Toyen, D.**, E. Wimolmala, N. Sombatsompop, T. Markpin and K. Saenboonruang. (2019). "Sm₂O₃/UHMWPE composites for radiation shielding applications: Mechanical and dielectric properties under gamma irradiation and thermal neutron shielding." Radiation Physics and Chemistry. 164: 108366.
4. **Toyen, D.** and K. Saenboonruang (2020). "Comparative X-ray shielding properties of bismuth oxide/natural rubber composites using a Monte Carlo code of PHITS." IOP Conference Series: Materials Science and Engineering 773: 012024.
5. **Toyen, D.** and K. Saenboonruang (2020). "Determination of radioactivities in gamma vulcanized natural rubber latex (GVNRL) for the assessment of radiological safety." IOP Conference Series: Materials Science and Engineering 773: 012011.
6. **Toyen D.**, Y. Paopun, E. Wimolmala, T. Markpin, K. Saenboonruang. (2021). "Surface modification of samarium oxide (Sm₂O₃) fillers and their corresponding morphological, wear, and mechanical properties of Sm₂O₃/UHMWPE composites" The 38th International Conference of the Microscopy Society of Thailand (MST38). 23 – 26 March 2021. (Online conference).

CONFERENCE PRESENTATIONS

1. **Donruedee Toyen**, Ekachai Wimolmala, Kiadtisak Saenboonruang. (2018). "Process, Mechanical and Neutron-shielding Properties of UHMWPE/Sm₂O₃ Composites. " The 19th National Graduate Research Conference. 9 March 2018. Khon Kaen University. 178-187.
2. Poltabtim, W., **D. Toyen** and K. Saenboonruang. (2019). "Comparative neutron-shielding properties of metal oxide/HDPE composites using a Monte Carlo Code of PHITS. " IOP Conference Series: Materials Science and Engineering. 526: 012013.
3. **Toyen, D.** and K. Saenboonruang. (2019). "Comparative X-ray shielding properties of bismuth oxide/natural rubber composites using a Monte Carlo code of PHITS. The 2nd International Conference on Materials Research and Innovation (ICMARI). 16 December 2019. Centara Grand Hotel Ladprao, Bangkok, Thailand.
4. **Toyen, D.** and K. Saenboonruang. (2019). "Determination of radioactivities in gamma vulcanized natural rubber latex (GVNRL) for the assessment of radiological safety. The 2nd International Conference on Materials Research and Innovation (ICMARI). 16 December 2019. Centara Grand Ladprao Hotel, Bangkok, Thailand.
5. **Toyen D.**, E. Wimolmala, T. Markpin, K. Saenboonruang. (2020). "Effects of Processing on Mechanical, Morphological, and Neutron-Shielding Properties of B₂O₃/UHMWPE Composites". The 37th International Conference of the Microscopy Society of Thailand (MST37). 28 February 2020. Kantary Hotel Korat, Nakhon Ratchasima, Thailand.
6. **Toyen D.**, Y. Paopun, E. Wimolmala, T. Markpin, K. Saenboonruang. (2021). "Surface modification of samarium oxide (Sm₂O₃) fillers and their corresponding morphological, wear, and mechanical properties of Sm₂O₃/UHMWPE composites". The 38th International Conference of the Microscopy Society of Thailand (MST38). 23 – 26 March 2021. (Online conference).
7. **Toyen D.**, P. Thanomchat, K. Saenboonruang, K. Wittayaphan, U. Sukatta, P. Siwayaprahm. "Effect of UV-C on Shelf-Life Extension in Sea Grapes (*Caulerpa lentillifera*)". 3rd Edition of Euro-Global Conference on Food Science and Technology. 30 September – 1 October 2021. (Online conference).