**Title: AIEgen-based Photodynamic Therapy**

**Abstract:**

Recent years have witnessed the fast growth of fluorogens with aggregation-induced emission characteristics (AIEgens) in biomedical research. In this talk, I summarize our recent discovery that AIEgens with high brightness and efficient reactive oxygen species generation in the aggregate state offered great opportunities for image-guided cancer surgery and therapy. By combining the accurate prediction of material performance via first-principle calculations and Bayesian optimization-based active learning, a self-improving discovery system was realized for high-performance photosensitizers, which significantly accelerated our materials innovation for photodynamic therapy. Various strategies to overcome the intrinsic disadvantages of traditional photodynamic therapy will also be discussed.

**Short Biography:**

Professor Bin Liu is Tan Chin Tuan Centennial Professor at the National University of Singapore (NUS). Bin graduated with bachelor's degree from Nanjing University and a Ph.D. in Chemistry from NUS. She had postdoctoral training at the University of California, Santa Barbara before joining NUS in 2005. Bin has been well-recognized for her contributions to polymer chemistry and organic nanomaterials for energy and biomedical applications. She is an international member of the US National Academy of Engineering. Since 2019, she has served as the Deputy Editor to launch and develop ACS Materials Letters, a flagship materials journal of the American Chemical Society.