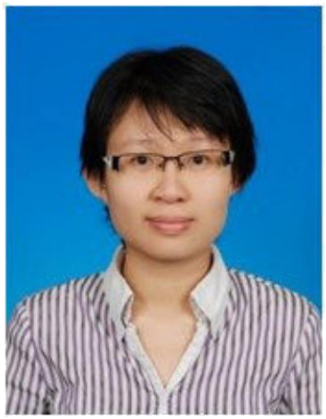
JANET LIM HONG NGEE

Ph.D. (Universiti Putra Malaysia)



ASSOCIATE PROFESSOR DR.
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EXPERTISE
Graphene, Materials Chemistry, Electrochemistry

Associate Professor Dr. Janet Lim Hong Ngee focuses on the synthesis of advanced functional materials for various applications such as energy storage, solar conversion and sensing. Her current interest in graphene, a two-dimensional sp2-carbon hybrid, has resulted in promising research outputs including outstanding capacitance values for supercapacitors, platinum-free dye-sensitized solar cells and highly selective sensors. There is also a merger of devices to materialize single multifunctional devices like photosupercapacitors and photo -electrochemical sensors. She has authored and co-authored more than 130 ISI -cited journal articles. Her research is sponsored by international and national fund providers.

CURRENT RESEARCH INTERESTS:

- **Graphene**

Graphene is able to enhance the chemical, electrical and mechanical properties of devices owing to its high electron mobility, flexibility, durability and ease of functionalization. The derivatives of graphene encompass inorganic and organic graphenous materials.

- **Supercapacitors**

Modification of electrode materials is a vital factor that influences charge storage and delivery. The synthesized nano-materials are subjected to electrochemical measurements to analyse their performance for real applications.

- **Sensors**

The synthesis of sensing materials is an exciting field that employs various approaches, resulting in a myriad of mor-phological structures.

- **Multifunctional devices**

A photo-supercapacitor is able to convert, store and deliver electrical energy in a single device. Meanwhile, a pho-to-electrochemical sensor exhibits excellent ability to detect analytes under the illumination of light. Materials science and engineering play a vital role in ensuring the maximum conversion, storage and delivery of electrical energy in a photo-supercapacitor, and the manifestation of photocurrent in a photo-electrochemical sensor.

LINK TO POSTGRADUATE FIELD OF STUDY:
Nanotechnology, Materials Science, Electrochemistry

ADDITIONAL INFORMATION:
Associate Professor Dr. Janet Lim Hong Ngee research interests are graphene and nanomaterials for various applications.