

ARAP WITH IMRE RESEARCH AREA: ENERGY MATERIALS

#	A*STAR Researcher	Designation	Email Address	Research Area
1	Ha Son Tung	Scientist	ha_son_tung@imre.a-star.edu.sg	The research in my group aims is to invent new types of efficient light sources (e.g., thresholdless lasers, polariton light-emitting diodes) based on the concept of nanophotonics for applications in display, sensing, optical communication, signal processing, and switching. The group focuses on resonant nanostructures' concept to enhance, manipulate, and encode electroluminescence of the light sources at extremely low energy applicable in integrated photonics circuitry. We would like to collaborate with groups that have expertise in material science, biosensing, quantum processing, non-linear optics.
2	Zainul Aabdin	Scientist	zainul_aabdin@imre.a-star.edu.sg	Advanced In-situ Microscopy (AIM) group is focusing on building a new metrology platform based on in-situ (scanning) transmission electron microscope (STEM/TEM) technique tailored for industry-relevant nanoscale processes and troubleshooting the associated challenges via direct-imaging instead of laborious trial-and-error approach. In addition, we apply advanced TEM techniques such as energy-filtered TEM (EF-TEM), electron energy-loss spectroscopy (EELS), Energy Dispersive X-Ray (EDX) to probe the chemistry, (precession) electron diffraction (ED) to reveal the nanostructure of the materials and cathodoluminescence (CL) to study their optical properties. Using these techniques, we study a variety of physical and chemical processes of materials dynamic in solid, liquid and gas media. The in-house developed customizable in-situ platform allows us to integrate and study a variety of samples. We are interested to collaborate with research groups working on energy materials, catalysis and semiconductor devices.
3	Ady Suwardi	Deputy Head, Scientist	ady_suwardi@imre.a-star.edu.sg	The research activities in my group covers wide aspects of sustainable and energy materials, as well as functional materials for thermal management and cooling. I also work on solid state materials, especially bulk alloys.
4	Liu Zhaolin	Principal Scientist I	zl-liu@imre.a-star.edu.sg	My research group focus on development of new energy storage and conversion materials.
5	Tong Shi Wun	Scientist	tongsw@imre.a-star.edu.sg	My research focuses on the large-area growth of atomically-thin two-dimensional semiconductors (e.g. CVD growth of transition metal dichalcogenides). I am interested in understanding the growth mechanism/process development/interfacial engineering with nanomaterials for energy-related applications (e.g. electrochromic, photovoltaic devices).
6	Derrick Fam	Scientist	derrickfam@gmail.com	Energy materials, solid state energy storage, polymer synthesis, kinetics of polymer crystallisation behaviour. I would like to collaborate with groups which are interested in polymer synthesis, mechanical modeling, materials testing and characterisation.
7	Jiang Changyun	Scientist	jiangc@imre.a-star.edu.sg	Our research group focuses on the development of: (1) Novel materials, printing processes and devices for solar energy harvesting, which including organic/SiNW/perovskite hybrid solar cells; (2) Materials and processes for smart windows for green building applications, based on reversible electrodeposition mirror (REM) technologies; (3) Wearables sensors including printed flexible electrochemical sensors for real-time and continuously monitoring of health conditions.
8	Yang Le	Deputy Head, Scientist	yang_le@imre.a-star.edu.sg	I would like to collaborate with groups who are experts in organic synthesis, organic/polymer material design, especially towards organic electronics/semiconductor applications. Also welcome other materials systems such as colloidal quantum dots, perovskites. My group focuses on studying materials photophysics, device fabrication, and device physics.
9	Kedar Hippalgaonkar	Senior Scientist	kedarh@imre.a-star.edu.sg	The research in my laboratory focuses on accelerating materials innovation through via high-throughput automation of experiments and characterization techniques, and machine learning optimization of experimental inputs with the aim of fastest convergence towards the optimum. Our team combines deep materials domain expertise with state-of-the-art machine learning models to achieve optimization, design of experiments as well as inverse design. I would like to collaborate with groups who are interested in functional materials design, machine learning and robotics and high-throughput characterization and data analytics.