

ARAP WITH IMRE RESEARCH AREA: MATERIALS SCIENCE AND ENGINEERING

#	A*STAR Researcher	Designation	Email Address	Research Area
1	Ady Suwardi	Scientist, Deputy Head / Adjunct Assistant Professor	ady_suwardi@imre.a star.edu.sg	Energy Harvesting Device using 3D printing. Thermoelectrics convert heat to electricity and vice versa. Owing to this ability, it can be used to harvest waste heat, or cooling. The major bottleneck hindering widespread commercial viability of thermoelectrics lies in its device fabrication process, which often involve intricate structures. In this project, we will explore the use of 3D printing to print thermoelectric devices with intricate shape and sizes. In addition, scalability and automation will also be looked into. Machine learning can be further incorporated to maximize the learning from the generated experimental data.
2	Chen Gang Wang	Scientist	wang_chen_gang@imre.a star.edu.sg	My research group focuses on exploring design, synthesis, and development of novel polymeric materials to provide practical solutions to environmental problems. We leverage our expertise in organic and polymer organic soft materials.
			3 Dan Kai Scientist kaid@imre.a star.edu.sg	My lab focus in the areas of biomaterials and soft materials which are interested in developing novel materials from lignocellulosic biomass or natural polymers.
4	Goh Simin Shermin	Scientist	gohsms@imre.a star.edu.sg	The research in my laboratory focuses on functional and dynamic cross linked polymers. We are interested in developing reprocessable thermosets, with stimuli responsive dynamic bonds, as recyclable functional materials. Current research activities focus on developing these materials for sensors and sustainability. We welcome collaboration with groups who are interested in exploring these materials for your applications, or in developing novel recyclable materials together.
5	Goh Simin Shermin	Scientist	gohsms@imre.a star.edu.sg	The research in my group focuses on electrochemical chemosensors, in particular, non enzymatic sensors for redox inactive species. We aim to discover new porous materials as binding species and study their sensing performance. I would like to collaborate with groups who have expertise in porous liquids and frameworks.

My research is interdisciplinary in nature, with a theme in the synthesis of advanced nanostructured materials

6 Jackie Y. Ying

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23	Wei Fengxia	Scientist	wei_fengxia@imre.a star.edu.sg	I mainly focus on two areas: (1) hybrid functional materials (2) advanced characterizations for metal alloys. The work involves extensive crystallography. I would like to collaborate with groups which are interested in (1) development of functional materials, such as perovskites, MOFs etc and (2) mechanistic studies on metal alloys. Nano structured ferroics and device functional mechanisms Nanoferroics, including ferroelectric, ferroelastic, ferromagnetic and multiferroic nanostructured materials, possess a variety of extraordinary behaviors that make them extremely attractive for multi functional device applications. Currently the project is focusing on exploration of nano structured ferroelectrics for realization of new functional mechanisms and/or outstanding piezo smart related performance. The ferroelectric materials' functions and properties are tailored by manipulating their composition, nanostructure, stress, and geometry. (As an example, refer to our recent publication in Science (369, 292–297, 2020).) For students with strong engineering background and interests, they are encouraged to further demonstrate advanced piezo MEMS and NEMS (micro and nano electromechanical systems) devices using the obtained high performance nano ferroelectrics. The research in my laboratory focuses on design, growth, and characterization of ferroelectric and piezoelectric materials. I would like to collaborate with groups which have expertise on theoretical analyses including first principles.
24	Yao Kui	Principal Scientist	k yao@imre.a star.edu.sg	The research in my laboratory focuses on cold spray deposition of a variety metallic powders including Al6061, Ti64, Inconel 718, CoNiCrAlY, etc. I would like to collaborate with groups which are interested in cold spray and have expertise in cold spray additive manufacturing. My research interests I would
25	Zhang Zheng	Senior Scientist	zhangz@imre.a star.edu.sg	
26	Zhao Meng	Scientist	zhaom@nus.edu.sg	