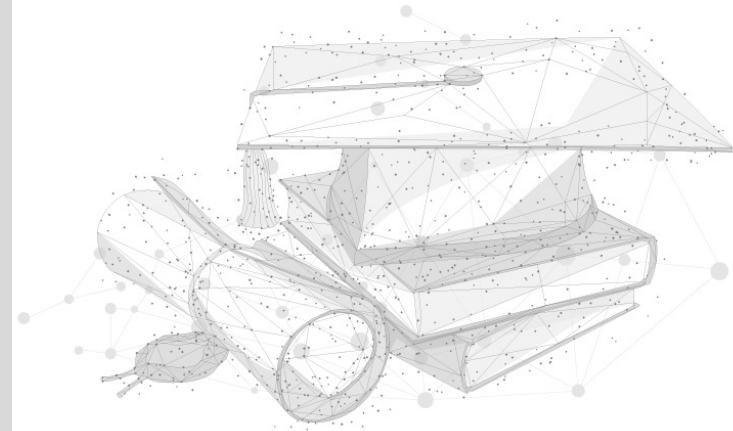


Area of Research

Natural Sciences and Science Education



 Research Domains	 Scope of Research	 Faculty Members (Potential Supervisors)
Pharmaceutical Chemistry	Marine natural products chemistry Drug discovery Marine cyanobacteria Marine invertebrate-associated microbes	Dr Tan Lik Tong
Science Learning and Teaching	Chemistry education Diagnostic instruments Alternative conceptions Conceptual change Variation theory Practical work	Assoc Prof Daniel Tan
Science Learning and Teaching	Biology education Learning in primary science STEM curriculum planning Science teacher learning Science classroom interactions Inquiry-based learning	Assoc Prof Tan Aik Ling
Science Learning and Teaching	Sociocultural learning theory Curriculum research Epistemic knowing Classroom assessment Qualitative methods Science education for development	Assoc Prof Lee Yew Jin
Science Learning and Teaching	Physics education STEM education Scientific and epistemic practices (e.g., reasoning, modelling, and argumentation) Collaborative learning	Asst Prof Ong Yann Shiou

 Research Domains	 Scope of Research	 Faculty Members (Potential Supervisors)
Science Learning and Teaching	Chemistry education	Assoc Prof Teo Tang Wee
Science Learning and Teaching	Physics education Primary science education Student-generated representation Intuition in science education	Asst Prof Joonhyeong Park
Science Learning and Teaching	Primary Science Education Science inquiry Technology-based learning Sociocultural learning Representation	Asst Prof Jina Chang
Science Learning and Teaching	Whole person education Chemistry education AI in education (i) automatic assessment (ii) multimodal learning (iii) human-AI collaboration Lab-based learning Curriculum Studies	Asst Prof Gyeonggeon Lee
STEM Education	Equity issues in STEM education	Assoc Prof Teo Tang Wee
STEM Education	Design-based inquiry Integrative STEM education Immersive learning technologies	Dr Tan Ter Ming Timothy
STEM+C & AL/ML Education	Computational Thinking/Pedagogy Engineering Education/Psychology Artificial intelligence & machine learning education	Asst Prof Ibrahim H. Yeter
Molecular Physiology	Ammonia toxicity in fish Molecular mechanisms in giant clam-dinoflagellate associations Salinity adaptations in fish	Assoc Prof Chew Shit Fun
Artificial Intelligence in Education	AI in Science Education AI in Special Needs Education AI in STEM Education Impact of AI on Teaching and Learning Transformational Properties of AI for Education AI Instructional Support AI-Enabled Professional Development AI-Facilitated Learning	Asst Prof Edwin Chng

 Research Domains	 Scope of Research	 Faculty Members (Potential Supervisors)
Plasma Physics and Nuclear Fusion	High energy density plasma (HEDP) - pinch plasma in Plasma Focus (PF) HEDP Plasmas for: (i) Fusion relevant research (ii) Multiple radiation source of x-rays, ions, electrons and neutrons (iii) Materials synthesis and processing under fusion relevant conditions Low temperature plasmas for energy storage and conversion material synthesis and processing	Prof Rajdeep Singh Rawat
Nuclear Radiation Measurement and Imaging	Neutron and charged particle diagnostics for nuclear fusion Radiation imaging Coded aperture imaging Applications of pixelated silicon and CdTe radiation detectors	Assoc Prof Stuart Victor Springham
Spintronics and Nano-magnetism	High spin orbit coupling materials with high spin Hall angle Spin Hall nano oscillators Voltage controlled magnetization High Ku magnetic materials	Prof Rajdeep Singh Rawat
Inorganic and Bio-inorganic Chemistry	Inorganic and organometallic synthesis Biological activity of coordination complexes	Assoc Prof Yan Yaw Kai
Plant Physiology	Photosynthesis (chlorophyll fluorescence, Rubisco protein) LED quality and quantity on photosynthesis and vegetable production Halophyte vegetables grown under saline condition with LED lighting Microclimate control to increase yield and nutrients of leafy vegetable at lower energy requirements Impact of abiotic stresses on tropical orchids	Assoc Prof He Jie

 Research Domains	 Scope of Research	 Faculty Members (Potential Supervisors)
Space Electric Propulsion	Low power electric propulsion for small satellites Hall thrusters (5-200 W) Hollow cathodes (< 1 A) Fundamental studies on the Rotamak nuclear fusion device Rotamak-like plasma thrusters Plasma diagnostics for electric propulsion (electrostatic probes, OES) Low and ultra-low thrust measurements	Prof Xu Shuyan
Consumer Food Science	Consumers' perceptions and practices towards sustainable food consumption and food-related issues	Dr Johannah Soo
Ecology	Vertebrate ecology Terrestrial ecology Conservation biology	Dr Norman Lim T-Lon
Organic Synthesis	Metal mediated C-heteroatom cross-coupling reactions Metal mediated C-H functionalization reactions	Dr Teo Yong Chua
Nanotechnology and Materials Chemistry	2D nanomaterials Energy storage Membrane technology Electrocatalysis Bio-sensor	Asst Prof Edison Ang Huixiang
Medicinal Inorganic Chemistry	Investigation of metal complexes as potential therapeutics for cancer Pathogen-Host cell interaction studies Apoptosis	Dr Peter Lee
Marine Environmental Biology	Marine ecotoxicology Coral reef ecology Intertidal ecology	Dr Beverly Goh