Kim Siang Khaw 许金祥

Tenured Fellow, Tsung-Dao Lee Institute (TDLI), and Tenured Associate Professor, School of Physics and Astronomy (SPA), Shanghai Jiao Tong University

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Kim Siang Khaw leads the Muon Physics Group at the Tsung-Dao Lee Institute, Shanghai Jiao Tong University. His research connects precision tests of fundamental physics with detector development, new muon sources and underground imaging. Trained in Japan, Switzerland and the United States, he established his research programme at TDLI in 2019 and received tenure in 2025.

Appointments & education

2025 – Present	Tenured Fellow, Tsung-Dao Lee Institute (TDLI), and Tenured Associate Professor, School of Physics and Astronomy (SPA), Shanghai Jiao Tong University
2019 – 2025	T. D. Lee Fellow, TDLI, and Associate Professor, SPA, Shanghai Jiao Tong University
2015 – 2019	Postdoctoral Research Associate, University of Washington, USA
2011 – 2015	Ph.D., ETH Zurich, Switzerland
2009 – 2011	Master, University of Tokyo, Japan
2005 – 2009	Bachelor, Kyoto University, Japan

Selected honours

2026	Fellow, Institute of Physics Malaysia (IFM)
2026	Shanghai Jiao Tong University President’s Award
2026	Breakthrough Prize in Fundamental Physics (shared, as a member of the Muon g−2 Collaboration)
2024	Pudong New Area “Pearl Elite Talent”, Shanghai
2018	Inaugural Fundamental Physics Innovation Award, Gordon and Betty Moore Foundation & American Physical Society

Scientific leadership & contributions

Muon g−2: precision through analysis

Role. Chair of the CBO Systematics Task Force and co-convener of Beam Dynamics Corrections.

Our group contributes to the anomalous precession-frequency analysis and beam-dynamics corrections. The 127 ppb result is an achievement of the full Muon g−2 Collaboration.

PSI muEDM: from detector to beam test

Role. Leading our group's muon entrance-trigger detector research for the frozen-spin experiment.

The team develops the trigger detector and fast front-end electronics, tests prototypes with muon beams and characterises their response.

SHINE: designing a new muon source

Role. Leading the group's electron-driven muon-source programme in Shanghai.

Target and beamline simulations explore a high-repetition-rate surface-muon source and accelerator-based muography. Performance numbers are design predictions, not operating-beam measurements.

Muography: translating physics into field research

Role. Leading the group's programme linking detector development with underground-infrastructure studies.

At the Shanghai Outer Ring Tunnel, our detector measured a muon-rate variation correlated with the Huangpu River tide, establishing a pilot for further monitoring studies.

Collaboration leadership & conference organisation

2026	Chair, NuFact 2026 — 27th International Workshop on Neutrinos from Accelerators, hosted at TDLI, Shanghai (31 Aug – 5 Sep)
2026	Member, Muon EDM Task Force, Fermilab Muon g-2 Collaboration (new direct muon EDM limit)
2023 –	Chair, CBO Systematics Task Force, Fermilab Muon g-2 Collaboration
2023 –	Co-convener, Beam Dynamics Corrections, Fermilab Muon g-2 Collaboration
	Member, Collaboration Board, muEDM Collaboration (PSI)
2022 – 2023	Member, Executive Board, Fermilab Muon g-2 Collaboration

Selected research & academic service

1. **Construction and characterization of a muon trigger detector for the PSI muEDM experiment**
   G.M. Wong, T. Hu, Samip Basnet et al. · 2026
   Eur.Phys.J.C 86 (2026) 7, 911
2. **Muonium Spectroscopy as a Quantum Sensor for Axion Dark Matter**
   F. Fang, K.S. Khaw, C. Zhang et al. · 2026
   Phys.Rev.Lett. 137 (2026) 11, 111803
3. **An improved direct limit on the muon electric dipole moment**
   Muon g−2 Collaboration · 2026
   Preprint, arXiv:2608.11124
4. **Measurement of the Positive Muon Anomalous Magnetic Moment to 127 ppb**
   Muon g-2 Collaboration · 2025
   Phys.Rev.Lett. 135 (2025) 10, 101802
5. **Simulation studies of a high-repetition-rate electron-driven surface muon beamline at SHINE**
   F. Liu, Y. Takeuchi, S. Chen et al. · 2025
   Phys.Rev.Accel.Beams 28 (2025) 8, 083401
6. **Towards non-invasive sediment monitoring using muography: A pilot run at the Shanghai Outer Ring Tunnel**
   K.S. Khaw, S.Y. Hoh, T. Hu et al. · 2025
   J.Appl.Phys. 138 (2025) 11, 114902

Full publication record: INSPIRE-HEP · Group publications. Collaboration-wide results are attributed to the full collaboration.

Editorial service

2026 – Present	Editor, Scientific Reports
2025 – Present	Youth Editor, Shanghai Land & Resources
2025 – Present	Youth Editor, Frontiers of Physics
2023 – 2024	Guest Editor, Nuclear and Particle Physics Proceedings — Special Issue, Workshop on Muon Physics at the Intensity and Precision Frontiers

Research training & mentoring

Supervision of undergraduate, postgraduate and postdoctoral research; weekly study group, journal club and experiment meetings; hands-on training in detectors, simulation and data analysis.

Working languages: English, Chinese, Malay, Japanese and German.

Selected record, not an exhaustive publication or service list. Sources: the public PI profile, curated service record and linked publications. Publication records refreshed 2026-11-20.