

Assistant Professor (Research) Weng-Hang Leong (梁永鏗)

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Academic Qualification:

PhD in Physics, Dec. 2014, School of Physics, Nanjing University, Nanjing, China

BSc in Physics, Jun. 2009, School of Physics, Nanjing University, Nanjing, China

Teaching Area

General Physics

Experiment of Engineering Science

Research Area

Quantum Engineering: Development of diamond quantum sensing technology

Application of diamond quantum sensing in material science, earth and planetary science and cell biology

Novel quantum phases in open quantum systems and strongly correlated systems

Working Experience

Sep. 2022 - present, Assistant Professor, Department of Engineering Science, MUST

Aug. 2019 - Aug. 2022, Research Assistant Professor, Department of Physics, CUHK

Oct. 2014 - Apr. 2019, Postdoctoral Fellow, Department of Physics, CUHK

Research Grants

Macao FDCT General Scientific Research Funding, May 2022 – present, *Development and Application of Nanodiamond Magnetic Microscopy in Meteorite Paleomagnetism*.

Hong Kong RGC General Research Fund, Sep. 2020 – Aug. 2022, *Study on glassy transition of polymer ultrathin films by thermo-mechanical diamond sensing*.

CUHK Direct Grant, Apr. 2020 – Mar. 2021, *Adhesive contact model validation by diamond sensing upon nanoindentation*.

Academic Publication (selected)

Yue Cui*, Weng-Hang Leong*, Chu-Feng Liu, Kangwei Xia, Xi Feng, Csilla Gergely, Ren-Bao Liu, and Quan Li, *Measurement of Single-Cell Elasticity by Nanodiamond-Sensing of Non-Local Deformation*, **Nano Letters** 22, 3889 (2022).

Xi Feng*, Weng-Hang Leong*, Kangwei Xia*, Chu-Feng Liu, Gang-Qin Liu, Torsten Rendler, Jörg Wrachtrup, Ren-Bao Liu, and Quan Li, *Association of Nanodiamond Rotation Dynamics with Cell Activities by Translation-Rotation Tracking*, **Nano Letters** 21, 3393 (2021).

Chu-Feng Liu*, Weng-Hang Leong*, Kangwei Xia*, Xi Feng, Amit Finkler, Andrej Denisenko, Jörg Wrachtrup, Quan Li, and Ren-Bao Liu, *Ultra-Sensitive Hybrid Diamond Nanothermometer*, **National Science Review**, nwa194 (2020).

Kangwei Xia*, Chu-Feng Liu*, Weng-Hang Leong*, Man-Hin Kwok, Zhi-Yuan Yang, Xi Feng, Ren-Bao Liu, and Quan Li, *Nanometer-Precision Non-Local Deformation Reconstruction Using Nanodiamond Orientation Sensing*, **Nature Communications** 10, 3259 (2019).

Ting Zhang*, Gang-Qin Liu*, Weng-Hang Leong*, Chu-Feng Liu, Man-Hin Kwok, To Ngai, Ren-Bao Liu, and Quan Li, *Hybrid Nanodiamond Quantum Sensors Enabled by Volume Phase Transitions of Hydrogels*, **Nature Communications** 9, 3188 (2018).

Ning Wang*, Gang-Qin Liu*, Weng-Hang Leong*, Hualing Zeng*, Xi Feng, Si-Hong Li, Florian Dolde, Helmut Fedder, Jörg Wrachtrup, Xiao-Dong Cui, Sen Yang, Quan Li, and Ren- Bao Liu, *Magnetic Criticality Enhanced Hybrid Nanodiamond Thermometer under Ambient Conditions*, **Physical Review X**

Weng-Hang Leong, Shun-Li Yu, T. Xiang, and Jian-Xin Li, *Localized In-Gap State in a Single-Electron Doped Mott Insulator*, **Physical Review B** 90, 245102 (2014).