

Research, Informatics and Graduate Studies

<https://sites.gtiit.edu.cn/research/positions/gs-2020010/>

PhD Position in Functional nonlinear spectroscopy of high-temperature superconducting materials (GS-2020010) – Group of Assoc. Prof. Khadga Jung Karki

The Physics Program (group of Asst. Prof. Khadga Jung Karki) is looking for 1 PhD student to conduct experimental research in understanding the light induced ultrafast dynamics in high-temperature superconducting materials.

Project Details

Since its discovery in 1986, high-temperature superconductivity (high-TS) has intrigued physicists. Although various theories have been proposed, the origin of high-TS is still unclear. Thus there is ongoing need to carry out elaborate measurements to validate (or invalidate) the appropriate theories. Time resolved spectroscopy, mainly pump-probe spectroscopy, has been useful in this context. However, traditional forms of pump-probe spectroscopy detect optical response of superconductors rather than directly measuring the effect of light on superconductivity. In this project we will use recently developed method of photocurrent-detected multi-dimensional spectroscopy to investigate the light induced break down and subsequent recovery of superconductivity at the femtosecond timescale. These measurements will help us understand the dynamics of correlated electrons, from which we aim to validate or repudiate the different theories of high-TS.

Keywords

High-temperature superconductivity, photocurrent detected two-dimensional spectroscopy, nonlinear spectroscopy.

Selection Criteria

- Master degree in physics or electrical engineering (essential).
- Familiarity with spectroscopy (preferable).
- Familiarity with programming languages (c, c++ , matlab, python, etc.) and proficient in one of them (essential).
- Familiarity with superconductivity (preferable).
- Ability to author scientific reports and papers (essential).
- Good communication skills and strong command of English (essential).
- Ability to work independently as well as in a team environment (essential).
- Strong interest to work temporarily in Israel, Germany or Sweden (essential).

Program

Physics

Research Area

Functional nonlinear spectroscopy of high-temperature superconducting materials

Contact

Assoc. Prof. Khadga Jung Karki

Email: Khadga.karki@gtiit.edu.cn

[Web Page Link](#)

Application Deadline

Open till filled

Date Posted

24 November 2020

Location

Guangdong Technion – Israel Institute of Technology (GTIIT), China & Technion-Israel Institute of Technology, Israel.

[Fees & Finance](#)

how to apply