



## Research Internship Opportunities at Rice University

The Smalley-Curl Institute invites applications from Master 1 students to work on the following projects with full financial support.

- Creating emergent phases of tunable magnons in graphene quantum Hall ferromagnet
- Fractional Chern insulators in moiré heterostructures
- Altermagnets – a novel magnetic order for spintronics
- Discovery of Kondo Weyl semimetals
- Johnson-Nyquist noise thermometry for thermal transport experiments
- Cavity-assisted multi-qubit gate operations for single T centers
- Optical spectroscopy of telecom quantum emitters in silicon
- Probing novel quantum materials using Raman spectroscopy
- Single-photon emission from Two-Dimensional materials
- Trapping 2D excitons
- Synthesis of Graphene materials by flash Joule heating
- Upcycling glass fiber-reinforced plastic into SiC materials
- Urban mining from electronic waste by flash Joule heating
- All Reflective Confocal Microscopy
- Continuous Wave and Ultrafast Spectroscopy
- Materials Characterization using Terahertz Ellipsometry
- Terahertz Imaging
- Gas Phase Molecular Spectroscopy
- Compact 3D Endoscopy and Medical Imaging
- Calibration-free Compact Lensless Gaze Tracker
- Neural Wavefront Shaping for Imaging Through Fiber Bundles

The detailed description of each project can be found here:

<https://drive.google.com/drive/folders/1Ajt6vBcDwfOICq2FgNmWsxCCcKG0RYgNc?usp=sharing>

### To apply

Please email Alma Catala Luna (alma.catala@minesparis.psl.eu), Jean-Francois Allemand (jean-francois.allemand@phys.ens.fr) and Yonglong Xie (yx71@rice.edu) with your CV and a ranked list of the top 3 projects you are interested in. Rice will match students and professors and arrange a Zoom call. Once matched, Rice will start the students' visa application process and other related paperwork.

If you have any questions, please email Yonglong Xie (yx71@rice.edu).