

Thursday, November 7, 2024

Refreshments at 3:15pm outside PSF 101
Colloquium from 3:30pm - 4:30pm in PSF 101

Tailoring Light-Matter Interaction in Moiré Superlattice

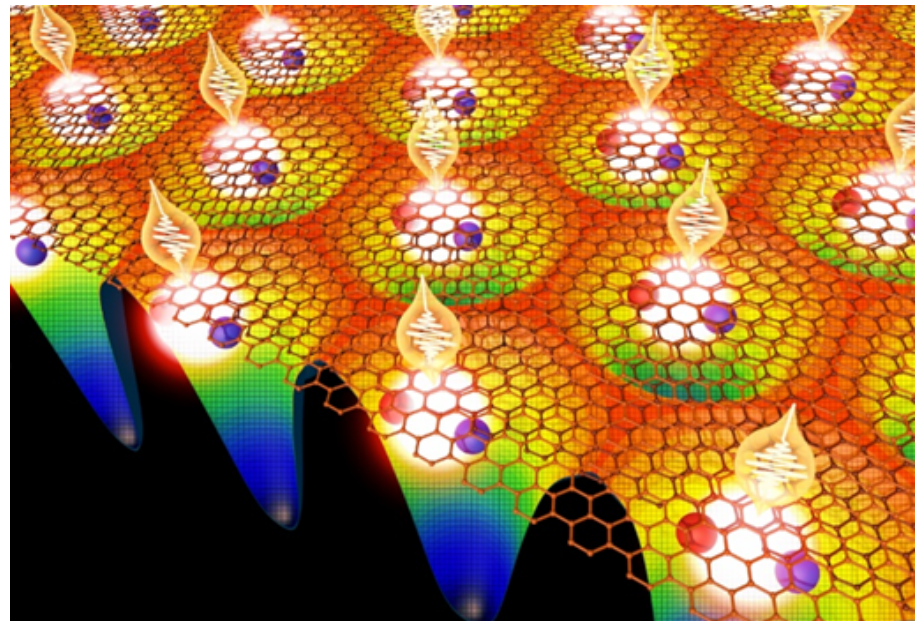
Professor Elaine Li

The University of Texas at Austin



Abstract:

The moiré superlattice serves as an elegant testament to how quantum mechanical principles can be harnessed to control material properties at atomic precision. By stacking two van der Waals layers with a meticulously controlled twist angle, we enter a domain where the subtle interplay of atomic alignments reveals a rich tapestry of tunable electronic and optical phenomena. I will focus on transition metal dichalcogenide-based moiré superlattices and give a few examples of tailored light-matter interaction including new types of excited states and how they evolve when a periodic structure transitions to a quasicrystal.



Biography:

Prof. Li is a professor in the physics department at the University of Texas-Austin. She received her Ph.D. at the University of Michigan in 2003 and worked as a postdoctoral researcher at JILA, Colorado. Since establishing her research group at the University of Texas in 2007, she has worked in several research areas including low-dimensional semiconductors, most recently in atomically thin van der Waals materials, magnetic materials, and nanophotonics. She has received several awards including the Presidential Early Career Award for Scientists and Engineers in the U. S. and a Sloan Fellowship. She was a Humboldt research fellow at the Technical University of Berlin between 2013-2015. She is a fellow of the American Physics Society and OPTICA.

Host: Prof. Robert Kaindl

View our Fall 2024 Physics Colloquium schedule at <https://physics.asu.edu/colloquia>