PHYSICS COLLOQUIUM:
Tailoring Properties of Two-Dimensional Materials from Controlled Synthesis

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Date:
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Time:
10:30 AM – 11:50 AM

Location:
GRAN 135

About The Speaker:

I am an assistant professor in the Department of Physics at University of California, Merced and a Faculty Scientist in the Materials Sciences Division at Lawrence Berkeley National Laboratory. Prior to my appointment at UC Merced, I was a postdoctoral research associate at Oak Ridge National Laboratory in Dr. David B Geohegan's group. I received my PhD degree from Arizona State University under the supervision of Prof. Sefaattin Tongay. I am an experimental condensed matter physicist and materials scientist. My work focuses on discovering new quantum materials and 2D materials through cutting edge synthesis methods and tailoring their properties by introducing heterogeneities. I have published over 60 articles with over 3000 citations.

Abstract:

Two-dimensional materials have attracted extensive research interests due to their intriguing optical, electronic, and magnetic properties. Pushing these materials toward practical applications requires controllable synthesis methods and facile routes for tailoring their properties on demand. In this presentation, I will show the synthesis of two-dimensional materials with controlled structure, morphology, and properties from the chemical vapor deposition approach. Multiple routes, including defect engineering and phase engineering, have been applied to manipulate the physical properties of these materials. Our work provides insights for achieving tunable properties in 2D semiconductors and quantum materials through controlled synthesis.

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