

RIT researcher receives grant from U.S. Navy

By: Kerry Feltner KERRY FELTNER August 9, 2017

A Rochester Institute of Technology researcher is leading a three-year study on precision quantum sensing by a \$550,000 grant from the U.S. Department of the Navy's Office of Naval Research, officials announced Wednesday.

Theoretical physicist Mishkat Bhattacharya will test interactions between light and matter at the nanoscale to analyze measurements of weak electromagnetic fields and gravitational forces, RIT said. He works in the field of levitated optomechanics—physics that investigates nanoparticles by trapping them in a laser beam.

"Levitated optomechanical systems provide a clean platform for studying quantum optics, information science, precision measurement and sensing," he said in a statement.

Bhattacharya collaborates with postdoctoral associate Pardeep Kumar and RIT undergraduate physics major Matt Wetzel in his research. His first study for the Office of Naval Research determined the smallest force that could be detected with a diamond crystal that levitated without spinning, officials said.

Quantum sensors might someday detect gravitational waves, find dark matter, perfect quantum computing and create precise accelerometers, Bhattacharya said.

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