Gurpreet Singh, assistant professor of mechanical and nuclear engineering at Kansas State University, has received a $500,000 National Science Foundation CAREER award for his research topic “Scalable liquid exfoliation processing of ultrathin two-dimensional metal dichalcogenides nanosheets for energy storage devices.”

Singh will use the award to develop ultrathin metal sheets that can help produce better rechargeable batteries, supercapacitors and catalysts for photoelectrochemical hydrogen production.

The award will help with more than research — Singh also will organize hands-on educational activities. He is planning nanotechnology-oriented summer workshops for high school science teachers and female high school students.

“I want to create excitement about the opportunities in nanotechnology and also make others aware of the challenges related to scalable manufacture and high cost that is currently hindering introduction in practical applications,” Singh said.

Singh received both his master’s and doctorate degrees in mechanical engineering from the University of Colorado at Boulder, and his bachelor’s degree in that discipline from the Government College of Engineering Pune in India.

Gurpreet Singh