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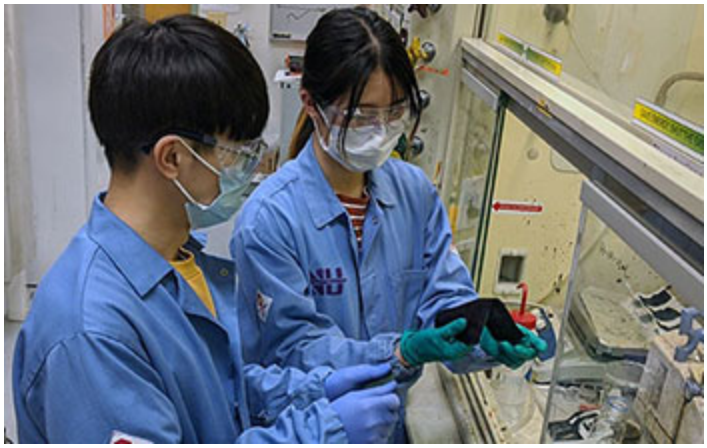
Research News

Chemically modified mask design could potentially slow the spread of viruses

Self-sanitizing face mask project receives NSF rapid response research grant



Researchers Hun Park (left) and Haiyue Huang work on development of self-sanitizing face masks.

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A Northwestern University (/cgi-bin/good-bye?https://news.northwestern.edu/stories/2020/03/self-sanitizing-face-mask-project-receives-nsf-rapid-grant/) researcher has received funding to develop a new self-sanitizing medical face mask that deactivates viruses on contact. The project received a rapid response research grant from the National Science Foundation <https://www.nsf.gov/awardsearch/showAward?AWD_ID=2026944&HistoricalAwards=false> .

"The spread of infectious respiratory diseases, such as COVID-19, typically starts when someone releases virus-laden respiratory droplets by coughing or sneezing," said Northwestern's Jiaxing Huang, who leads the research. "To further slow and even prevent the virus from spreading, we need to greatly reduce the number and activity of the viruses in those just-released respiratory droplets."

Huang's team is investigating anti-viral chemicals that can be safely built into masks to self-sanitize the passing respiratory droplets. Members of Huang's laboratory have been working non-stop to develop new solutions.

Current masks provide physical barriers, reducing the number of escaped respiratory droplets that could become new sources of infection after entering the atmosphere or landing on objects and surfaces.

Huang's team aims to design a drop-in solution that works with current masks to provide the additional function of deactivating viruses. The modified mask would help reduce the level of viruses in droplets exhaled by infected wearers, and better protect healthcare workers and others around them.

"These researchers are putting fundamental materials chemistry to work for the benefit of society," says Birgit Schwenzer, a program director in NSF's Division of Materials Research.

-- NSF Public Affairs, researchnews@nsf.gov (mailto:researchnews@nsf.gov)

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