Best of Last Week – Camera sees around corners, cold traps on the moon, how vitamin D reduces inflammation
22 November 2021, by Bob Yirka

A setup of one of the camera prototypes in the laboratory. Credit: Florian Willomitzer/Northwestern University

It was a good week for technology development as a team at Northwestern University announced a new high-resolution camera that can see the unseen—including around corners—using scattered coherent light. Also, a team with members from Rice University and University of Toronto Engineering reported the first measurements of the ultra-low-friction behavior of magnetene—a 2D iron oxide material with unusual properties. And the first electric autonomous cargo ship was launched in Norway. The zero-emission and eventually crewless ship will soon embark on a two-year working trial. And a team with members from several institutions in the U.S. and one in Japan developed a deep learning technique for global field reconstruction with sparse sensors. Also, a team at ETH Zurich announced that they had discovered major vulnerabilities in DRAM memory devices. And a team at the Chinese Academy of Sciences demonstrated a soft magnetic pixel robot that can be programmed to change shape.

Perhaps setting the stage for robots that can be used to monitor the environment or perform biomedical procedures remotely.

In other news, a team of researchers affiliated with a host of institutions across the U.S. conducted lung autopsies of COVID-19 patients that revealed treatment clues. They also learned more about how the virus spreads and damages lung tissue. Also, a team of researchers from China, Japan and the U.S. solved a 50-year-old mystery behind plant growth—how the molecule auxin sets growth in motion. And a team with members from several institutions in the U.S. confirmed the existence of cold traps on the moon for the first time, possibly providing a means for producing fuel for a future moon base.

And finally, if you are one of the millions of people around the world adversely impacted by inflammation related to a COVID-19 infection, you may want to check out the work of a joint effort by Purdue University and the National Institutes of Health. They gained new insights into how vitamin D functions to reduce inflammation caused by immune cells that might be relevant to responses during severe COVID-19 infections.