

J-WAFS researchers develop new way to clear pollutants from water

- ***Electrochemical method can remove even tiny amounts of contamination***

MIT researchers supported by the Abdul Latif Jameel World Water and Food Security Lab (J-WAFS) at Massachusetts Institute of Technology (MIT), in collaboration with others at the Technical University of Darmstadt in Germany, have developed a novel new way to clear pollutants from water.

Using an electrochemical process that selectively removes pollutants from water such as pesticides, chemical waste products, and pharmaceuticals, they can remove even tiny amounts of contaminants that can be harmful.

It does this by using ‘faradaic’ materials – materials that can be positively or negatively charged. By then adding an electrical charge, research can fine-tune the materials to attract and remove pollutant molecules at the smallest concentrations.

This helps address key limitations of conventional separation methods, such as cost, power and chemical treatment requirements. The highly efficient, electrically operated system could run on power from solar panels in rural areas, for example. While it still needs to be further tested to validate technical viability under real-world conditions, the prototype system has achieved promising results.

Hassan Jameel, President of Community Jameel in Saudi Arabia, said: “Developing technology like this is key to addressing water and food security, and clearing a common problem facing the world today. That is why J-WAFS is continuing to explore the power of science and technology to positively impact millions of lives.”

The Abdul Latif Jameel World Water and Food Security Lab (J-WAFS) was created by Community Jameel and MIT to spearhead research that will help humankind adapt to a rapidly changing planet and combat world-wide water scarcity and food supply.

The system was developed by the research of MIT’s Ralph Landau Professor of Chemical Engineering T. Alan Hatton, MIT postdoc in chemical engineering Xiao Su, as well as five others from MIT and the Technical University of Darmstadt in Germany.

For a video and more information on the research click here: <https://youtu.be/hceOKw-cjWo> and <http://news.mit.edu/2017/electrochemical-clear-pollutants-water-0510>