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## UI gets half-million-dollar grant for nuclear research

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URBANA — The University of Illinois has won a \$538,000 grant to help make nuclear power plants safer, longer-lasting and more efficient.

The U.S. Department of Energy research grant is focused on developing cutting-edge nuclear energy technologies and training and educating the next generation of leaders in the U.S. nuclear industry.

Principal investigator James F. Stubbins, professor and head of nuclear, plasma, and radiological engineering at Illinois, said the UI researchers will look at new materials that can withstand extraordinarily high temperatures and resist corrosion.

This would allow for more efficient use of nuclear energy at the same time it makes the equipment safer from any sort of leak, Stubbins said.

"The idea that we propose is to develop material that could go to very high temperatures for energy in general, but nuclear energy in particular, without corrosion," he said.

UI professors on the grant are Petros Sofronis and Huseyin Sehitoglu in the Department of Mechanical Science and Engineering; Brent Heuser in the Department of Nuclear, Plasma and Radiological Engineering; Ian Robertson in the Department of Materials Science and Engineering; and Andy Gewirth in chemistry. Stubbins said higher temperatures result in more energy efficiency.

"They'll last much longer and run at higher temperatures to efficiently convert steam to electricity. In most cases, two-thirds of the energy is lost in the conversion process," he said.

The end result, Stubbins said, is power that would not increase global warming, because it produces no carbon pollution.

He said the more-efficient processes would create clean energy jobs, while bolstering the U.S. nuclear energy industry — at a time some countries are cutting back on the plants.

In the wake of the earthquake and tsunami in Japan on March 10, Germany announced it will close all its nuclear energy programs by the end of 2022. Italy has followed suit. The UI project could start by Oct. 1.