UNLV is a doctoral-degree-granting institution with more than 27,000 students, approximately 5,200 of whom are graduate/professional students. The university is ranked in the category of “high research activity” by the Carnegie Foundation for the Advancement of Teaching. Nearly 120 graduate degree and certificate programs are offered, including 41 doctoral and professional degrees. UNLV offers a broad range of respected academic programs and is recognized as a premier metropolitan research university.
UNLV Selected for DOE Nuclear Energy University Program

Two UNLV research teams were awarded more than $1.6 million from the U.S. Department of Energy (DOE) to investigate new ways to safely separate and store radioactive waste from nuclear fuel recycling.

The DOE, as part of its Nuclear Energy University Program, supports a limited number of research projects to advance current nuclear reactor efficiency, find better ways to recycle and/or dispose of spent nuclear fuel, and design reactors that produce more energy and less waste. UNLV is one of just 32 universities nationwide to earn competitive awards under this program in 2012.

Both UNLV projects involve the radioactive element technetium, a common product from nuclear fission. UNLV is one of the few universities in the country that can perform this research with technetium. The radiochemistry program’s capability with radioelements is the basis for numerous collaborations with DOE laboratories, universities, and international laboratories.

One team, led by radiochemistry professor Ken Czerwinski, will look at the potential effectiveness of metal alloy storage for technetium.

Developing the right mix of metals requires an understanding of how the radioactive materials will behave on long time scales. Czerwinski and his team will model corrosion on a series of metals and stainless steel alloys containing differing amounts of technetium. UNLV physics research professor Eunja Kim and researchers from Los Alamos National Laboratory, Florida Memorial University, and Sandia National Laboratories will partner on the project.

Thomas Hartmann, a research professor with UNLV’s Harry Reid Center for Environmental Studies, will create advanced ceramic structures to immobilize technetium. The research team will determine how well technetium can be stabilized within ceramic structures under conditions expected at a generic geological repository.

According to the research team, advanced ceramics could prove more effective and technically efficient to immobilize technetium than current methods, including specialized glass. Hartmann and his team will compare leaching and corrosion of different advanced ceramic structures with those of current waste glasses to immobilize radioactive high-level waste. Steven Frank with Idaho National Laboratory will partner with Hartmann’s team.

The Nuclear Energy University Program was created by the DOE in 2009 to consolidate the agency’s university support and fund nuclear energy research and equipment upgrades at U.S. colleges and universities. For more information, visit neu.gov.