

LIVERMORE LAB REPORT

A weekly review of scientific and technological achievements from Lawrence Livermore National Laboratory, May 29 – June 1, 2012



AND THE WINNER IS...



Livermorium, with the symbol Lv, has officially been added to the Periodic Table of Elements.

The International Union of Pure and Applied Chemistry (IUPAC) on Thursday officially approved new names for elements 114 and 116, the latest heavy elements to be added to the periodic table.

Scientists of the Lawrence Livermore-Dubna collaboration proposed the names as Flerovium for element 114, with the symbol Fl, and Livermorium for element 116, with the symbol Lv, late last year.

Livermorium (atomic symbol Lv) was chosen to honor Lawrence Livermore National Laboratory and the city of Livermore. A group of researchers from the Laboratory, along with scientists at the Flerov Laboratory of Nuclear Reactions, participated in the work carried out in Dubna on the synthesis of superheavy elements, including element 116. (Lawrencium -- Element 103 -- was already named for LLNL's founder E.O. Lawrence.)

To read more, go to the [Web](#).



Young ring-tailed lemur in densely forested area of Madagascar.

Photo by Brooke Crowley

The extinction of several species of lemurs has had a profound effect on the lemurs of today.

In a new study appearing in the *Proceedings of the Royal Society B*, researchers have found that the extinction of at least 17 species of lemurs during the last 2,000 years in Madagascar has helped determine where today's lemurs are living and breeding.

The study may provide insight into the prevention of extinction of modern day lemurs.

The researchers, including the Laboratory's Tom Guilderson and Paula Zermeno, used the Lab's Center for Accelerator Mass Spectrometry to radiocarbon date temporal shifts in the niches of current lemur species following the extinction of eight large-bodied species.

To read more, go to the [Web](#).



THE LAST STAND FOR CLEANER COAL



For more than 30 years, gasification technology has promised a smarter conversion of coal to electricity. By using heat and pressure to turn coal's mix of molecules into a consistent stream of simple gases, gasification plants squeeze more power from a ton of coal and control the resulting by-products better.

In April, engineers in China, fired up a gasification power plant that will provide a "critically important" test of the technology's commercial potential as a low-carbon power source, according to Julio Friedmann, who leads the carbon management program at the Laboratory.

The facility, known as GreenGen, is the world's largest coal-fired integrated gasification combined cycle (IGCC) generator. It's also the first built explicitly as a test bed for capturing carbon.

"We still have no plan as nations or as a world to make really deep greenhouse-gas emissions cuts. We have not economically vetted most of our important options, including IGCC plants such as GreenGen," Friedmann said.

To read more, go to the [IEEE Spectrum](#).

OSA® ALL EYES ARE ON SEPPALA



Lynn Seppala

Lynn Seppala has been named a senior member of the Optical Society of America (OSA), an international society for optics and photonics scientists, engineers, educators and business leaders. Senior membership status recognizes members with more than 10 years of significant experience and professional accomplishments or service in their fields.

Seppala, a senior optical designer supporting the National Ignition Facility (NIF), received the elevated status in recognition of his contributions to optics research.

In addition to his work on NIF, he was a key contributor to the optical design of the 8.4 meter diameter Large Synoptic Survey Telescope (LSST). When operational in 2020 on Cerro Pachón in the Chilean mountains, LSST will be the world's largest light-gathering astronomical telescope. He chaired the OSA optical design technical group in 1990-1992.

LLNL applies and advances science and technology to help ensure national security and global stability. Through multi-disciplinary research and development, with particular expertise in high-energy-density physics, laser science, high-performance computing and science/engineering at the nanometer/subpicosecond scale, LLNL innovations improve security, meet energy and

environmental needs and strengthen U.S. economic competitiveness. The Laboratory also partners with other research institutions, universities and industry to bring the full weight of the nation's science and technology community to bear on solving problems of national importance.

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