

News: Names Proposed for Elements of Atomic Number 114 and 116

At the Closing Ceremony of the International Year of Chemistry in Brussels on December 1st 2011 the President of the International Union of Pure and Applied Chemistry (IUPAC), Professor Nicole J. Moreau, announced the proposed names for the elements with atomic numbers 114 and 116. On May 1st last a Joint IUPAC-IUPAP (International Union of Pure and Applied Physics) Working Party assigned the priorities for the discoveries of these elements (see www.IUPAC.org for details) to collaborative work between scientists from the Joint Institute for Nuclear Research in Dubna, Russia and from Lawrence Livermore National Laboratory, California, USA (hereinafter referred to as the Dubna-Livermore collaborations). Following the procedure laid down by IUPAC the scientists involved in the collaboration were invited to propose names for the elements. With Professor Yuri Oganessian as spokesperson the collaborators have proposed the name flerovium (symbol Fl) for element number 114 and the name livermorium (symbol Lv) for that with number 116. These proposed names have now also been examined and approved by the Inorganic Chemistry Division (Division II) of IUPAC which clears the way for IUPAC to issue a Provisional Recommendations document. The Provisional Recommendations will be made available in the very near future for Public Comment for five months and will also be sent to expert referees. At the end of the Public Comment period, the Inorganic Chemistry Division will review the comments made and either revise the Recommendations or recommend approval by the IUPAC Council. After approval by the IUPAC Council, or its designate, the Recommendation of the name and symbol will be published in the IUPAC Journal, *Pure and Applied Chemistry*.

Both of the names proposed lie within the long tradition of the choice of names for elements. The proposal for 114 will honour the Flerov Laboratory of Nuclear Reactions where the superheavy elements are synthesised. Georgiy N. Flerov (1913 – 1990) is recognised as a renowned physicist, author of the discovery of the spontaneous fission of uranium (1940, with Konstantin A. Petrzhak), pioneer in heavy-ion physics; and founder in the Joint Institute for Nuclear Research the Laboratory of Nuclear Reactions (1957). It is an especially appropriate choice because since 1991 this laboratory, in which the element was synthesised, has borne his name. Professor G.N. Flerov is known also for his fundamental work in various fields of physics that resulted in the discovery of new phenomena in properties and interactions of the atomic nuclei; these have played a key role in the establishment and development of many areas of further research.

The name proposed for element number 116 honours the Lawrence Livermore National Laboratory (1952). A group of researchers of this Laboratory with the heavy element research group of the Flerov Laboratory of Nuclear Reactions took part in the work carried out in Dubna on the synthesis of superheavy elements including element 116. Over the years scientists at Livermore have been involved in many areas of nuclear science: the investigation of fission properties of the heaviest elements, including the discovery of bimodal fission, and the study of prompt gamma-rays emitted from fission fragments

following fission, the investigation of isomers and isomeric levels in many nuclei and the investigation of the chemical properties of the heaviest elements.

About IUPAC - IUPAC was formed in 1919 by chemists from industry and academia. For more than 90 years, the Union has succeeded in fostering worldwide communications in the chemical sciences and in uniting academic, industrial, and public-sector chemistry in a common language. IUPAC is recognized as the world authority on chemical nomenclature, terminology, standardized methods for measurement, atomic weights, and more. In recent years, IUPAC has been proactive in establishing a wide range of conferences and projects designed to promote and stimulate modern developments in chemistry. Another key focus of the organization is on improving chemistry education and encouraging public understanding of chemistry. More information about IUPAC and its activities is available at www.iupac.org. For questions, contact Dr. Terry Renner, Executive Director, at secretariat@iupac.org. In 2011, IUPAC was co-sponsor with UNESCO of the International Year of Chemistry, www.chemistry2011.org. IUPAC's next Congress and General Assembly will be held in Istanbul, 9 – 15 August, 2013.