

The PhosAgro/UNESCO/IUPAC partnership aims to generate and apply new scientific knowledge in green chemistry by promoting activity in this area. The partnership also seeks to reinforce the research capacities of participating institutes and the cooperation between them and to increase awareness of the opportunities offered by advances in green chemistry among policy- and decision-makers in governments, science and industry, and among the public at large...

The grants are intended to harness the talents of young scientists worldwide to advance the contribution of green chemistry to the protection of the environment and human health, the creation of new, environmentally-sound, science-based technologies, and the identification of novel vistas for energy savings and the use of natural resources.

Young scientists are invited to submit their applications no later than **28 February 2016**.

Information on How to Apply is available on the UNESCO website at :

www.unesco.org/new/en/natural-sciences/science-technology/basic-sciences/chemistry/green-chemistry-for-life/how-to-apply

2016 IUPAC-Richter Prize—Call for Nominations

IUPAC and Gedeon Richter, Plc. are pleased to announce the 2016 IUPAC-Richter Prize in Medicinal Chemistry. The Prize was established in 2006 by a generous gift from the Chemical Works of Gedeon Richter, Plc. (Budapest, Hungary) to acknowledge the key role that medicinal chemistry plays in improving human health. The prize—USD 10000—is awarded to an internationally recognized scientist, preferably a medicinal chemist, whose activities or published accounts have made an outstanding contribution to the practice of medicinal chemistry, or to an outstanding example of new drug discovery. Previous IUPAC-Richter Prizes were awarded to Malcolm F.G. Stevens in 2006, Jan Heeres in 2008, Arun K. Ghosh in 2010, Stephen Hanessian in 2012, and Helmut Buschmann in 2014.

The 2016 IUPAC-Richter Prize will be presented during the XXIV EFMC International Symposium on Medicinal Chemistry, 28 August – 1 September 2016, in Manchester, UK, where the recipient will also give a plenary lecture on the subject of his/her research.

Applicants should be received by nomination only.

One person should submit the nomination, although a total of five (5) individuals should be listed as referees. The package must be submitted electronically and should contain a complete resume, a professional autobiography of no more than two pages, and a one-page summary of what the individual considers to be his/her activities, accomplishments, and/or publications that have had the most significant impact upon the field of Medicinal Chemistry. The material will be forwarded confidentially to an independent selection committee appointed by the IUPAC Subcommittee on Drug Discovery and Development.

Nomination materials should be submitted by **15 February 2016** to the IUPAC Secretariat by email at <secretariat@iupac.org>.

For further information contact János Fischer, Chair of the IUPAC Subcommittee on Drug Discovery and Drug Development at <j.fischer@richter.hu>

www.iupac.org/news/news-detail/article/2016-iupac-richter-prize-call-for-nomination.html

The Hague Ethical Guidelines

As a way of promoting a culture of responsible conduct in the chemical sciences and to guard against the misuse of chemistry, the Organisation for the Prohibition of Chemical Weapons (OPWC) facilitated a project, begun in November 2014, to develop ethical guidelines for chemistry practitioners related to the Chemical Weapons Convention. Two workshops involving a group of more than 30 scientists and chemistry professionals from over 20 countries were organized to discuss and draft possible ethical guidelines for the practice of chemistry under the norms of the Convention. The workshops were held on 10-11 March and 17-18 September 2015 at OPCW Headquarters in The Hague and were chaired by Professor Alejandra Suárez of Argentina.

As an outcome of the workshops, *The Hague Ethical Guidelines* were drafted, intended to serve as elements for ethical codes and discussion points for ethical issues related to the practice of chemistry under the Convention. The core of the guidelines, which draw on many existing elements, is based on the premise that “achievements in the field of chemistry should be used to benefit humankind and the environment”. The guidelines provide a useful framework for debating the vital dimension of ethics in relation to chemical

disarmament and non-proliferation.

Several IUPAC members have been involved in the preparation and review of the guidelines. At the workshops, information was shared about the earlier IUPAC project 2007-022-2-020 (see www.iupac.org/project/2007-022-2-020 or feature published in *Chem. Int.* Nov-Dec 2011, pp. 7-11) and which outcome released in 2011, provides draft elements for a code of conduct.

www.opcw.org/special-sections/science-technology/the-hague-ethical-guidelines

Crystallography for the Next Generation

The International Year of Crystallography 2014 (IYCr2014) Legacy conference, held in Rabat, Morocco in April 2015 under the High Patronage of His Majesty King Mohamed VI, reviewed the accomplishments achieved during IYCr2014, with a forward-looking focus sustaining momentum and building on past success. The President of the International Union of Crystallography (IUCr), the Director of the Science Policy and Capacity Building Division of UNESCO, the President of the World Academy of Science, and the Director of the International Council for Science—Regional Office for Africa signed a letter of commitment and invited IUPAC to endorse the actions and goals set out in the IYCr2014 Legacy Resolution.

The resolution embraces the need to enhance the stature of crystallography, build capacity in developing regions of the world, and extend the public understanding of science in general and crystallography in particular.

The full text of the IYCr2014 Legacy Resolution is available online and individual supporters are invited to endorse it, echoing that Crystallography matters ... more!

<http://iycr2014.org/declarations/legacy-endorsement>

Light and Chemistry

MinSik Cho (18 years old) of the CheongShim International Academy in Korea is awarded first prize in the 2015 IUPAC Physical and Biophysical Chemistry Division student cartoon competition for his cartoon describing the origins of color in molecules. The theme of the competition, held during the 2015 International Year of Light, was Light and Chemistry. MinSik's cartoon was selected both for the excellence of the artwork and the quality of the scientific message conveyed. The members of the Division would like to wish him well in his further studies and thank him and the other entrants for participating in the competition.

Color, That's Where Chemistry Matters!

CheongShim Intl' Academy
MinSik CHO

We all know that we see an object due to the light reflected from the surface.

Then, what makes color in these reflected light?

In molecules, electrons are positioned in a room-like volume 'orbital'

Highest occupied orbital is called HOMO. Lowest unoccupied orbital is called LUMO.

Light with energy LUMO-HOMO is absorbed, in order to excite the electrons in molecule.

If light is shone, light of some wavelength is absorbed, and some aren't depending on the molecule.

As light is absorbed, we see the color that is complementary to the absorbed color.

Molecules have distinct orbital energy level. That's why we have a colorful world!

H₃C-OH, Me, Xanthophyll, CH₃, CH₃, CH₃, I'm β-carotene!