KILU Newsletter week 47, 2014-11-20

Talking Heads

Last week the annual Post-graduate studies day at KILU took place. The theme of the event this year was "The career after dissertation". There were presentations of various career paths and the afternoon ended with general career advice from the Swedish Association of Professional Scientists (Naturvetarna) together with a representative from a recruitment company. The event gathered about 45 Ph D students. During the event there was also a small poster exhibition where Ph D students were given the opportunity to share their science with colleagues over division and unit borders. The organizers would like to thank everyone (students and speakers) who participated during the afternoon.

All LTH departments have been asked to present a written analysis of the consequences of the planned cut-back of GU funding for 2015. For KILU-LTH, the GU funding for 2015 decreases with about 4.5% in comparison to 2014. This together with no compensation for higher cost (e.g salaries) as well as no change in the indirect costs will have a significant impact on undergraduate teaching. The analysis asked for is limited to 1,5 A4 pages/department and therefore we can only give a brief description of the consequences. The content has been discussed in the GU-group and in the board of KILU and will be submitted Friday November 21. In our document, we stress that this kind of decrease is not possible to achieve on a short term basis and that it cannot be done without significant loss of quality in our education.

Finally, the KILU board meeting this week endorsed the suggestion from the election committee to appoint Viveka Alfredsson as deputy head of the department, and this suggestion has been passed on to the deans of the LTH and the Science faculty, who takes the formal decision on the appointment. In discussions with the head of the department-elect, Viveka has estimated that her workload as deputy head will be 10% of a full-time duty, and the decision of the board was along this line.

/Olle Söderman and Jan-Olle Malm

News

Chemistry research sold on option for billions to American drug company

Professor Ulf Nilsson's drug candidate against the serious and difficult disease pulmonary fibrosis has been sold on option to the US pharmaceutical company Bristol-Mayers Squibb for 3.3 billion SEK. Together with colleagues from Lund, Denmark and England, Ulf Nilsson has developed a revolutionary drug candidate that hopefully will be able to significantly improve the treatment of the intractable disease, Idiopathic pulmonary fibrosis. In 2011 they founded the company Galecto Biotech to commercialize the molecule.

In the beginning of November it was revealed that the pharmaceutical company Bristol-Myers Squibb, BMS, has received exclusive option to purchase Galecto Biotech for 3.3 billion SEK. Through the acquisition, BMS also has exclusive rights to the drug candidate TD139.

Read more about it here (In Swedish)
Read a short interview with Ulf Nilsson here
Sugar beets can become blood substitute

Researchers from the Department of Chemistry have discovered that sugar beets can produce haemoglobin. They now hope that this haemoglobin could serve as a blood substitute – a substance that is currently in short supply.

The research results were recently presented and published by Nélida Leiva, PhD in Pure and Applied Biochemistry.

Previously, it has been presumed that certain plants produce this iron protein only when stressed, such as in drought or frost, because it has been seen that this is the case for certain other plants. However, we have shown that haemoglobin is produced even in a normal state, said Nélida Leiva.

Nélida Leiva’s supervisor, Professor Leif Bülow, has spent many years conducting research on the production of human haemoglobin, primarily with the help of bacteria, because haemoglobin from blood donors is far from sufficient to cover the needs of society. In some countries blood banks are non-existent or very limited, which means that alternatives must be developed quickly. It is especially important to get hold of these substitutes in emergency situations where safe blood transfusions are of vital importance. Read the whole article here.

The research has been widely spread in media during the last weeks. See here: Sydsvenskan, Metro, SVT, Kvällsposten, Sveriges radio

Discovery of new avenues in energy transport

In the race of making everything smaller there is a desire to construct electronic devices using molecules as building blocks. Chains of specially designed pigment molecules can be used to exchange information within such a device via energy transfer.

Researchers from the Division of Chemical Physics have discovered how the energy of a photon absorbed by a molecular chain was transmitted 100 nm to a special site formed on the chain. This was accomplished using super-resolution optical microscopy – the technique awarded the Nobel prize in Chemistry this year.

These findings have an important technological impact for designing more efficient organic solar cells. The research has recently been published in Nano Letters. Read the paper here

New findings on the molecular origins for presbyopia

Presbyopia is a common condition for people over 40 which effects the vision and the ability to see objects from a close range. The condition is due to changes of the lens. The lens becomes hard and less elastic.

In a recent publication in PNAS, researchers from the Division of Physical Chemistry demonstrate that concentrated solutions of a prevalent eye lens structural protein, α-crystallin, show high-concentration dynamical slowing down similar to that of hard-sphere glass transitions. This suggests that analogous investigation of concentrated crystallin mixtures, like those in the living lens, may help to advance understanding of the molecular basis of presbyopia. Read the paper here.

Villy Sundström receives award for his research within advanced time-resolved spectroscopy

Villy Sundström has received the Celsius Medal in gold from the Royal Society of Sciences in Uppsala. With the motivation "for successful research with advanced time-resolved spectroscopy to understand the fundamental chemical processes in future energy systems".

The medal was received at the Society's annual celebration at Uppsala Castle, the 8th of November.

Taste sensations revealed at the latest Research Lunch at Kemicentrum.

In the beginning of November professor Ulf Ellervik held the first Research Lunch at Kemicentrum. If you missed Ulf's lecture you can watch it on Youtube here.

Next Research Lunch will be held by Charlotta Turner on the 10th of December. She will talk about the search for antioxidants (Mästerdetektiv på jakt efter antioxidanter). See more information here.

The International The Year of Crystallography 2014 is coming to an end.
Lots of activities have been going on around the globe to celebrate the International Year of Crystallography. Last week The Royal Academy of Sciences organized a conference in Lund on “Crystallography – present and future” with a strong coupling to the future facilities in Lund, MAX-IV and ESS.

Recently Anders Liljas, Sven Lidin (Lund university) and Ivar Olofsson (Uppsala University), published a book, From a Grain of Salt to the Ribosome. The History of Crystallography as Seen Through the Lens of the Nobel Prize, related to the year of crystallography. It contains biographies and central publications of 33 Nobel laureates in crystallography.

The Guild of Chemical Engineering and Biotechnology turns 50!
The students guild was formed in 1965 and we are celebrating our 50th anniversary next year. The celebration will be focused to the spring, mainly by the grand Anniversary Ball in AF-borgen on the 16th of May 2015. The week prior to this will be full of activities of all kinds, including inspirational lectures and memorials to remember the history of the guild.

If you are interested in participating or would like to contribute with anything, please fill out this form or contact k-jubileum@ttith.se.

Together we will make the 50th anniversary unforgettable!
/Oskar Hansson Anniversary General

PhD information

Advanced x-ray microscopy course for PhD students
Due to advanced synchrotrons it is possible to obtain detailed images of structures using X-rays. In this course the basics of X-ray interaction with matter and the concept of different X-ray Microscopy methods will be covered. X-ray microscopy applied to specific materials will also be discussed. The course will be given February-April 2015
For more information visit http://www.admire.lu.se/courses/advanced-x-ray-imaging/

CALENDAR

2014-11-21
Defence of thesis in Biotechnology
Peter Falck, Kemicentrum, Lecture Hall C at 13.15

2014-11-21
Seminar in Chemistry
Experimental and theoretical considerations about organic-solvent-free epoxidation catalyzed by molybdenum and vanadium-oxo complexes. At 15.15, Kemicentrum Lecture Hall F

2014-11-21
Seminar in Biotechnology
Aspergillus nidulans α-l-arabinofuranosidase has high activity on wheat arabinoxylan and a surface binding site interacting with plant polysaccharides. At 10.15 in Marie Curie seminar room, Kemicentrum.

2014-11-28
Defence of thesis in Inorganic Chemistry
Mainak Mitra, Kemicentrum, Lecture Hall F at 13.00

2014-12-01
Workshop: Technical Platforms for Plant research
Learn about regional platforms for bioinformatics, -omics sciences, carbohydrate profiling, bioimaging and plant growth. December 1st, 12:00-17:00, IDEON

2014-12-10
Forskarlunch med Charlotta Turner
Mästerdetektiv på jakt efter antioxidanter. Café Ester, Kemicentrum kl 12.15.
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**Read our student blogg - Kemibloggen**
Read about the life of some of our students.