Earth & Atmospheric Sciences News

Undergraduate Students work on new standards
Undergraduate students Shirley Chen, Sabrina Cohn, Maria Cogliand and Orian Painter represented the Department of Earth and Atmospheric Sciences at a standards development simulation exercise organized by the American National Standards Institute (ANSI) at San Jose State University in Santa Clara, CA, on October 27th.

The CCNY team joined five other University teams, each one representing stakeholders in the development of an international standard. The participation of the CCNY team was made possible thanks to a travel grant awarded to Dr. Lampsouss by ANSI. The same students work with Dr. Lampsouss on a project funded by the National Institute of Standards and Technology (NIST) to support standards education in undergraduate and graduate curricula. Congratulations to Prof. Lampousis and his students!

Biochemistry News

Chemistry Seminar
Wed, Nov 29, 2017, 12 pm – 1 pm, ASCRC Auditorium
Speaker: Andrew Jon Nieuwkoop, Assistant Professor of chemistry & chemical biology, Rutgers University
Title: "Using Very Fast Spinning and Proton Detection to Solve Protein Structures with Solid State NMR"  
Abstract: Solid state NMR of biological systems is a rapidly expanding field that is tightly connected with improvements in hardware. The advantages of solid state NMR as a technique is in its ability to address the structures of insoluble, noncrystallographic systems at atomic resolution. This is possible because of magic angle spinning, which averages anisotropic interactions leaving behind the sharp isotropic signals seen in solution NMR.  
In the last decade, the maximum MAS rates have increased first from 20 to 40 kHz, then to 60 kHz and very recently to 100+ kHz. As a result, new techniques have become available, one of which is proton detection. I’ll discuss my work using proton detected ssNMR on membrane proteins. This will include optimization of pulse sequences and sample preparation, as well as computational improvements to aid in structure determination.
For more information call 212-650-8803.

Chemistry News

Biochemistry Seminar
Monday, Nov 20, 2017, 12 pm, Marshall Room 1027
Event organizer: Stephen O’Brien
Speaker: Mahesh Lakshman, CCNY
Title: "Chemistry of Uncommon Reactivities of Diboron Reagents"  
Abstract: Research in our laboratories is directed towards a number of synthetic, methodological, and mechanistic ventures. These include: (a) metal-catalyzed C–C and C–N bond formation with nucleosides, and catalyst modulation for regioselective functionalization, (b) purinyl N-directed remote functionalization of nucleosides, (c) hypervalent iodine-reagent-mediated nucleoside modifications, (d) synthesis and studies of new ligands for catalysis chemistry, (e) nucleoside modification via uncatalyzed methods and, recently, with benzotriazole-based peptide-coupling agents, (f) synthesis and studies of angularly fused polyyclic aromatic hydrocarbons, and (g) novel reactions of arynes. Alongside these research areas, we have been investigating the utilities of diboron reagents that contain a B–B bond. In this talk, the development of the reductive reactions with diboron compounds will be described.

Math News

Math Club
Thursday, November 30, 2017, 1 pm, NAC 6/106
Speaker: Jason Redman, CCNY Math Department
Title: "The Seven Bridges of Königsberg"  
Abstract: In 1736, Leonhard Euler was given a problem to which he said there is no solution. This problem laid the foundations of graph theory and prefigured the idea of topology. We will talk about this problem, which has no solution, and why it was so significant along with some fun explorations into the world of graph theory!

Math Colloquium
Thursday, December 7, 2017, 12:30 pm, NAC 6/111
Speaker: Peter Winkle, William Morrill Professor of Mathematics and Computer Science, Dartmouth College
Title: "The Puzzle that Spawned 100 Philosophy Papers"  
Abstract: Proposed 17 years ago by philosopher Adam Elga, "Sleeping Beauty" seems to be a simple question about probability. Is it? If so, why does it incite such passion? We’ll describe the various “camps” in the controversy, and attack or defend their arguments. In the end, you’ll have to decide for yourself where you stand.

Physics News

Physics Colloquium
Wed, Nov 29, 2017, 4 pm – 5 pm, Marshall Room 418N
Event organizer: Myriam Sarahich, 212-650-5618
Speaker: Dan Shahar, Weizmann Institute of Science
Title: "Duality symmetry and the superconductor-insulator transition"  
Abstract: Combining the many electron physics of superconductivity, effects of strong disorder and localization, reduced dimensionality and high magnetic fields, it is not surprising that the superconductor-insulator transition is still, after more than 30 years, an active field of research. I will review recent progress and discuss the many open questions in the field. I will then show that the superconductor-insulator transition exhibits a remarkable duality symmetry directly relating the resistance measured in the superconducting regime to the conductance measured in the insulator. This symmetry points to a deep relation between these two seemingly opposing phases. At very low temperatures (below 200 mK for our amorphous indium-oxide films) this beautiful symmetry is severely violated. We demonstrate that this violation can be associated with the emergence of a novel insulating ground-state in which the electrons are effectively decoupled from the host phonons. We further show that duality symmetry can be effectively restored by driving the system out of equilibrium.

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