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## Wednesday, January 15, 2014 Somerset-Bridgewater Hotel, Somerset, New Jersey (Formarky Crowne Blaza Hotel)

(Formerly Crowne Plaza Hotel)

#### **Alexander Orlov**

Materials Science & Engineering Department/Chemistry Department
Stony Brook University
Stony Brook, NY 11794-2275 USA
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# Exploring catalysis from sub-nm scale to urban scale: development of a new generation of catalysts for environmental and energy applications

Developing novel nanostructures for environmental and energy application is an immensely exciting and rewarding area of research. Tuning shape and size of nanoparticles/nanostructures can produce new catalysts with the most striking properties. This can become even more promising when the size of the catalysts is reduced to sub-nanometer dimensions. In the area of sustainable energy we have demonstrated that such approach can produce catalysts with order/orders of magnitude higher activities as compared to that of traditional catalysts. More specifically we studied gas phase/liquid phase oxidation/reduction reactions activated by light. In particular, the sub-nm range of noble metal nanoparticles supported on oxides and sulfides was explored. Several other projects studied new nanostructures for environmental applications both in terms of air quality and water quality. Finally, the scale-up applications for catalytic air purification at the urban scale will be also discussed.

Dinner is a buffet, and includes Members \$40 a choice of beef, chicken or fish Non-members \$50

Social Hour (Cash Bar) 6:00 PM Students \$25 (Student Members = \$10)

Dinner 7:00 PM Retired/Post-Doc/ Unemp. \$40 (Members = \$30)

Presentation 7:45 PM Annual Dues \$35 (Student/Retired = \$15)

#### Deadline for dinner reservations is 2:00 p.m. Friday, January 10, 2014

Email Zhong He (zhe@primusge.com) for reservations. With the exception of extreme circumstances, anyone not canceling reservations by the above deadline will be billed for dinner regardless of attendance.

2013-2014 Officers: Lucas Dorazio (Chair), Xiaoming Wang (Chair-Elect), Simon Podkolzin (Past Chair), Israel Wachs (Catalysis Society Rep), Zhong He (Secretary), John Brody (Treasurer), Robert McGuire (Webmaster), John Byrne, Marco Castadi, Partha Nandi (Directors), Taejin Kim (Director-Membership), Christopher Keturakis (Student Representative)