

Okazaki Conference

The 69th Okazaki Conference New Frontier in Quantum Chemical Dynamics

(February 21–23, 2010)

Organizers: S. Nanbu (*Sophia Univ.*), T. Ishida (*Kyoto Univ.*), A. D. Kondorskiy (*Lebedev Phys. Inst.*), N. Kosugi (*IMS*), K. Nobusada (*IMS*)

Invited Overseas Speakers: V. Aquilanti (*Univ. Perugia*), PKe-Li Han (*Dalian Inst. Chem. Phys.*), A. D. Kondorskiy (*Lebedev Phys. Inst.*), L. Bonnet (*Univ. Bordeaux I*), Y. Zhao (*Xiamen Univ.*), N. Doltsinis (*King's College London*)

The 69th Okazaki Conference was held on February 21–23, 2010 in Okazaki Conference Center. We had more than 100 participants including 33 invited speakers. The scope of the conference is as follows. Quantum effects play crucial roles in a variety of physical, chemical, and biological dynamics, providing specific properties and uniqueness in material and nano-scale molecular system. Since wide abilities of the modern technology to modify the objects at atomic scale, operate with different parts of proteins and DNA, controllable synthesize of complicated molecules opens an exciting perspectives to place the quantum effects in the service. In this outlook of the modern chemistry, the persistent effort of

theoreticians would provide us the new insight into the future science. The purpose of the conference is that cutting-edge researchers working on molecular dynamics get together to discuss the most recent results, approaches and tendencies in the area of treating and control of the quantum effects.

Topics of the conference:

- (1) Quantum Effects in Chemical Dynamics and Non-Adiabatic transition
 - (a) Basic theory and semiclassical theory of non-adiabatic transition
 - (b) Tunneling phenomena of many degrees of freedom
- (2) Reaction (molecular) dynamics with many degrees of freedom
 - (a) Quantum interference in semiclassical theory of many degrees of freedom
 - (b) Ab initio MD simulations
 - (c) Quantum effects in solution reactions
- (3) Molecular design and control of molecular function
 - (a) Control of photoreaction by laser
 - (b) Molecular design including quantum effects.

