

SCOPE OF THE MEETING:

Quantum Science Symposium (QSS) Asia - 2013 is our first meeting in Asia, and our Third international symposium in the physical sciences series to be held at the Sanjo Conference Hall of the University of Tokyo, Tokyo, Japan. The first meeting was organized in Cambridge, Massachusetts, USA at the Courtyard Marriot near Harvard University and Massachusetts Institute of Technology on September 26-27, 2011, which was inaugurated by MIT Physics Nobel Laureate Professor Frank Wilczek. The second meeting was held at the prestigious Peterhouse (college) of the University of Cambridge, United Kingdom on November 1-2, 2012, which was presided by Professors David Ritchie and Stephen Blundell of the University of Cambridge and Oxford respectively. The purpose and scope of this symposium is to provide a forum for the discussion of the current state of the art of rapidly evolving Quantum & Graphene science, highly interdisciplinary fields.

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Although quantum physics/mechanics was an old topic widely popularized by German Physicist Erwin Schrödinger during 1940's and American Physicist Richard Feynman during 1980's, however, the progress made over the last decade in quantum science (includes information, computing and communication) has provided ground work for quantum cryptography and quantum networks to become a reality. In parallel, molecular spintronics, quantum optics, nanophotonics, entanglement to quantum memories also advanced at a rapid speed. The cross-disciplinary merger of quantum physics and nanophotonics with principles of networking in communication opens new perspective for developing modern quantum communication applications with an eye on practical devices. On the other hand, graphene is the basic structural element of some carbon allotropes including graphite, charcoal, carbon nanotubes and fullerenes. The promising properties of the graphene have been extensively demonstrated by Andre Geim and Konstantin Novoselov (2010 Physics Nobel Prize recipients).

In this theme meeting, we combined quantum plasmonics/spintronics with graphene plasmonics and semiconductors to develop next-generation devices. Additionally, the applications of semiconductors, graphenes with respect to quantum science will be focused, most importantly: graphene use as a quantum liquid, quantum transport in tri-layered graphenes, graphene transistors and nanoribbons. Quantum repeaters, gates and computation built on a single module will be also addressed using trapped ions, qubits and integrated photonics. Especially quantum tunneling, entanglement in biology, and development of a new generation of quantum dots for biological imaging, graphene biosensors for diagnostics will be addressed. The branch of quantum spintronics and graphene has attracted a much attention in recent years from both academic and industry laboratories, so we combined the quantum science (quantum information, quantum computing, quantum communication, quantum biology) with graphene research, grouped and referred as '*Quantum Science Symposium.*'

In this international meeting, prominent researchers (physicists, chemists, materials scientists, biologists, electrical, electronic and computer engineers) from both academia and industry will gather and discuss the applications in form of keynote lectures, invited talks, short oral, and poster presentations.

Note: All the members (except keynote speakers) who participate in this symposium have to register for the meeting by paying the appropriate registration fee.

Venue: Sanjo Conference Hall, University of Tokyo, Tokyo, Japan. Limited number of rooms is available at the Sanjo Hall and University guesthouses for meeting participants with an advanced booking. However, nearby nice and comfortable hotel information is given in the accommodation page of this meeting. Please join for an intellectual gathering in the '*Quantum Science*' arena in the electronic city of the world, Tokyo, Japan.