Quantum Communications and Quantum Imaging IV (OEI122)

Part of SPIE's International Symposium on Optics & Photonics
13-17 August 2006 • San Diego Convention Center • San Diego, CA, USA

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Quantum communications and quantum imaging are emerging technologies that promise great benefits as well as great challenges. The objective of this conference is to provide a forum for researchers and system developers in both fields and encourage technology exchange between the quantum communication and quantum imaging communities.

Papers are solicited on the following and related topics:

-Quantum Communications and Enabling Science and Technology
- quantum free-space and fiber optics communications and cryptography
- quantum communications and quantum imaging free-space and fiber optics experimental demonstrations, tests, and performance
- teleportation; continuous variable teleportation
- quantum key distribution (QKD), entangled QKD, stochastic QKD, heralded QKD
- atmospheric quantum communication propagation theory, simulation
- atmospheric quantum communication and satellite technologies
- atmospheric effects on quantum systems
- nonlinear crystal use in generating and engineering entanglement
- single photon sources
- photon sources, continuous and pulsed laser sources of entangled photons
- single-photon and multi-photon detectors
- multi-photon and multiple-particle entangled states
- squeezed states
- quantum two-photon sensing and detection
- slow/trapped light and photons
- qubit physics.

-Quantum Imaging and Metrology
- quantum imaging and metrology through the atmosphere: technology theory, simulation
- quantum imaging and quantum lithography
- quantum clock synchronization
- quantum holography
- quantum imaging theory
- uncertainty principle in quantum imaging
- quantum image communication
- quantum versus classical imaging physics
- quantum imaging versus/with speckle imaging
- quantum imaging experiments
- quantum imaging and satellites
- quantum imaging noise reduction
- bi-photon photo resist

-Quantum Internet and Quantum Information
- simulation of the evolution of quantum communication, quantum computing, quantum imaging systems
- quantum storage, gates, control
- optical/photonic/fiber quantum computing
- Bell state analyzer development
- type-II quantum computing theory, hardware, software, and applications
- fine-grained quantum computing, few-qubit computing, and communication
- novel quantum computing
- quantum information communication
- quantum data compression
- quantum secret sharing
- quantum algorithms.

Abstract Due Date: 30 January 2006
Manuscript Due Date: 17 July 2006

Submission of Abstracts for Optics & Photonics 2006 Symposium

Abstract Due Date: 30 January 2006
Manuscript Due Date: Week of 17 July 2006

Instructions for Submitting Abstracts via Web

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IMPORTANT! To ensure proper processing of your abstract, the SUBJECT line must include only:

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Your abstract submission must include all of the following:

1. **PAPER TITLE**

2. **AUTHORS** (principal author first) <u>For each author</u>: First (given) name (initials not acceptable), Last (family) name, Affiliation, Mailing address, Telephone, Fax, and Email address.

3. **PRESENTATION PREFERENCE** "Oral Presentation" or "Poster Presentation."

4. **PRINCIPAL AUTHOR'S BIOGRAPHY** Approximately 50 words.

5. **ABSTRACT TEXT** Approximately 250 words.

6. **KEYWORDS** Maximum of five keywords.

Conditions of Acceptance

- <u>Authors are expected to secure funding for registration fees, travel, and accommodations, independent of SPIE, through their sponsoring organizations before submitting abstracts</u>.
- Only original material should be submitted.
- Commercial papers, papers with no new research/development content, and papers where supporting data or a technical description cannot be given for proprietary reasons will not be accepted for presentation in this symposium.
- Abstracts should contain enough detail to clearly convey the approach and the results of the research.
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- To ensure a high-quality conference, all abstracts and Proceedings manuscripts will be reviewed by the Conference Chair/Editor for technical merit and suitability of content. Conference Chair/Editors may require manuscript revision before approving publication, and reserve the right to reject for presentation or publication any paper that does not meet content or presentation expectations. SPIE's decision on whether to accept a presentation or publish a manuscript is final.
- Applicants will be notified of abstract acceptance by mail no later than 24 April 2006. Early notification of acceptance will be placed on SPIE Web the week of 17 April 2006 at http://spie.org/events/op
- Final placement in an oral or poster session is subject to the Chairs' discretion. Instructions for oral and poster presentations will be sent to you by email. All oral and poster presentations <u>require presentation at the meeting and submission of a manuscript</u> to be included in the *Proceedings of SPIE*.

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