

NLO

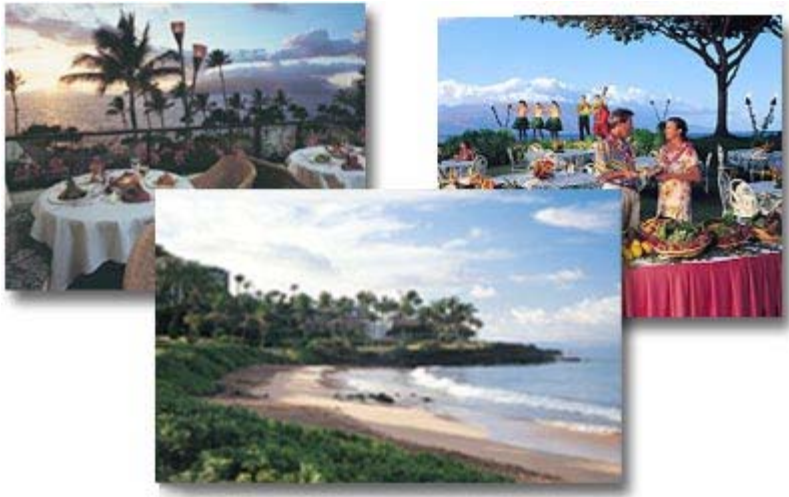
Nonlinear Optics: Materials, Fundamentals and Applications

>> Topical Meeting and Tabletop Exhibit

July 29 - August 2, 2002

Wailea, Maui, Hawaii
[Outrigger Wailea Resort](#)

It's not too late! Submit a [Postdeadline Paper](#).



The organizers of the Nonlinear Optics Topical Meeting gratefully acknowledge the financial support from the following:

*Air Force Office of Scientific Research (AFOSR)
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About Nonlinear Optics

July 29 - August 2, 2002

The purpose of this meeting is to provide an international forum for discussion of all aspects of nonlinear optics, including new phenomena, novel devices, advanced materials and applications

Meeting Scope

>> Topics to be Covered

The topics to be considered in the main program will include, but not be limited to:

Fundamental studies and new concepts

- Quantum optics, computation and communication
- Solitons and nonlinear propagation
- Ultrafast phenomena and techniques
- Surface, interface and nanostructure nonlinearities
- Microcavity and microstructure phenomena
- High intensity & relativistic nonlinear optics
- Slow light
- Coherent control
- Novel lasers and frequency converters

Nonlinear materials

- Atoms, molecules and condensates
- Semiconductors
- Nanostructures
- Organics
- Photonic bandgap structures
- Fibers and waveguides
- Photorefractives

Applications

- Lasers and amplifiers
- Frequency converters
- Optical communications
- Photonic switching
- Ultrafast measurement
- Frequency combs and optical clocks

- THz generation, spectroscopy and imaging
- Materials processing
- Optical storage

NLO Speakers

Invited Speakers

The preliminary list of invited speakers for the NLO program includes:

- Physics and material challenges of quantum dots for optoelectronics applications

Yasuhiko Arakawa, Univ. of Tokyo, Japan

- Biomedical applications of nonlinear optical spectroscopy

Paul Campagnola, Univ. of Connecticut, USA

- Nonlinear phenomena in micromechanical structures based on Casimir forces

Federico Capasso, Lucent Tech., USA

- Higher order correlations and semiconductor optical nonlinearities

Hyatt Gibbs, Univ. of Arizona, USA

- Tunable compact THz sources and their application

Hiromasa Ito, Tohoku Univ., Japan

- Nonlinear photonic crystals: waveguides, all-optical switching and solitons

Yuri Kivshar, Australian Natl. Univ., Australia

- Breaking the 1-femtosecond barrier: the advent of attosecond metrology

Ferenc Krausz, Tech. Univ. of Vienna, Austria

- Advances in ultra-long-haul dense-WDM terrestrial transmission

Linn Mollenauer, Lucent Tech., USA

- Light in a tight space: Enhancing matter-light interactions using photonic crystals

Philip St. Russell, Bath Univ., UK

- Generation and applications of femtosecond X-rays from the Advanced Light Source

Robert Schoenlein, Lawrence Berkeley Natl. Lab, USA

- Nonlinear optics in chiral media

Y.R. Shen, Univ. of California-Berkeley, USA

- Quantum dots: artificial atoms for quantum computing

Duncan Steel, Univ. of Michigan, USA

- Nonlinear optics with two photons (or less)

Aephraim M. Steinberg, Univ. of Toronto, Canada

- Bio-photonic crystal effects in multiphoton microscopy

Chi-Kuang Sun, Natl. Taiwan Univ., Taiwan

- High harmonic generation by relativistic Thomson scattering

D. Umstadter, Univ. of Michigan, USA

- Measuring short pulses using nonlinear optics and measuring nonlinear materials using short pulses

Ian Walmsley, Univ. of Oxford, UK

- All-optical signal processing using nonlinear fibers

Shigeki Watanabe, Fujitsu Ltd., Japan

- Single photons and entangled photon-pairs from a single quantum dot

Yoshi Yamamoto, Stanford Univ., USA

- Ultrafast all-optical switching using intersubband transitions in InGaAs/AlAsSb quantum well structures

H. Yoshida, The Femtosecond Tech. Res. Assoc., Japan

- Steering molecules by light: from NLO as a goal to NLO as a tool

Joseph Zyss, LPQM-ENS Cachan, France

- Few optical cycle pulses in strong-field ionization and non-linear optics

Sandro De Silvestri, INFN-Unita di Ricerca di Milano-Politencnico, Italy

- Ultrafast coherent electron transport in quantum cascade laser structures

Thomas Elsaesser, Max Born Inst., Germany

- Quasi-Periodic Functions and Femtosecond Pulses

Steve Harris, Stanford Univ., USA

- The quest for single-cycle optical pulses

Franz Kaertner, MIT, USA

- Coherent control of atoms and molecules, for applications in nonlinear optics

Henry Kapteyn, Univ. of Colorado, Boulder, USA

- Nonlinear atom optics of bosons and fermions

Pierre Meystre, Univ. of Arizona, USA

- Ultrafast Optical TDM Transmission with the use of Femtosecond Pulses

Masataka Nakazawa, Tohoku Univ., Japan

- Dynamics of Spectral Hole Burning in Self Organized Quantum Dot Amplifiers

Ted Norris, Univ. of Michigan, USA

- Pattern formation and clustering of solitons in nonlinear weakly-correlated wave systems

Moti Segev, Technion Israel Inst. of Tech., Israel

- Spatial Solitons in Periodically Poled KTP (PPLTP)*

George Stegeman, Univ. of Central Florida, USA

- Carrier-wave Rabi flopping in GaAs and its dependence on the absolute optical phase

Martin Wegener, Univ. of Karlsruhe, Germany

- Free space quantum key distribution over 10km in daylight and at night

Richard Hughes, Los Alamos National Laboratory

- Quantum logic operations using linear optical elements

James Franson, Johns Hopkins Univ.

Publications

>> Technical Digests

The NLO Technical Digest will be comprised of the camera-ready summaries of papers being presented during the NLO meeting. At the meeting, each registrant will receive a copy of the Technical Digest. Extra copies can be purchased at the meeting for a special price of \$60.

Exhibitor List

As of June 19, 2002

>> NLO Exhibitors

- Davis Marketing
- Photonics Spectra
- Thorlabs, Inc.

Agenda of Sessions

▼Sunday, July 28, 2002	
4:00PM - 8:00PM	Registration
▼Monday, July 29, 2002	
7:30AM - 12:30PM	Registration
7:30PM - 9:30PM	Registration
Mauna Loa	Ilima
8:30AM - 10:00AM MA , High Field Nonlinear Optics	
10:00AM-10:30AM Coffee Break	
10:30AM - 12:30PM MB, THZ Generation and Material Probing	10:30AM - 12:30PM MC, Optical Communications
12:30PM - 7:30PM, Break, On Your Own	
7:30PM - 9:30PM MD, Short Pulses and Weak Fields	
▼Tuesday, July 30, 2002	
7:30AM - 12:30PM	Registration
7:30PM - 9:30PM	Registration
Mauna Loa	Ilima
8:00AM - 10:00AM TuA Transmission, Generation and Processing	
10:00AM-10:30AM, Coffee Break	
10:30AM - 12:30PM TuB, Wavelength Conversion	10:30AM - 12:30PM TuC, Solitons and Pulse Shaping
12:30PM - 7:30PM, Break, On Your Own	
7:30PM - 9:30PM TuD, Quasi-Periodic Functions, Control and Atom Optics	
▼Wednesday, July 31, 2002	
8:00AM - 5:00PM	Registration
Mauna Loa	Ilima
8:00AM - 10:00AM	

WA, Semiconductor NLO 1	
10:00AM - 10:30AM, Coffee Break	
10:30AM - 12:30PM WB, Optical Pulses: Generation and Diagnostics	10:30AM - 12:30PM WC, Nonlinear Optics in Solids
12:30PM - 2:00PM, Lunch Break, On Your Own	
2:00PM - 3:30PM WD, Semiconductor Optics 2	
	3:30PM - 5:00PM, WE, Poster Session
Luau 7:00PM - 10:00PM	
▼Thursday, August 1, 2002	
8:00AM - 12:30PM	Registration
7:30PM - 9:30PM	Registration
Mauna Loa	Ilima
8:00AM - 10:00AM ThA, Bio-Chemical Nonlinear Optics	
10:00AM - 10:30AM, Coffee Break	
10:30AM - 12:30PM ThB, Semiconductors	10:30AM - 12:30PM ThC, NLO in Chemistry and Biology
7:30PM - 9:30PM ThD, Photonic Crystals and Solitons	
▼Friday, August 2, 2002	
8:00AM - 12:30PM	Registration
Lokelani I	Lokelani II
8:00AM - 10:00AM FA, Quantum Computing and Entanglement	
10:00AM - 10:30AM, Coffee Break	
10:30AM - 12:30PM FB, Photonic Crystals and Waveguides	10:30AM - 12:30PM FC, Raman and Parametric Processes