

**WORKSHOP ON ION TRAP TECHNOLOGY, Boulder, Colorado, February 16,17, 2011  
(<http://www.nist.gov/pml/div688/grp10/ionworkshop.cfm>)**

**SCOPE:**

The capabilities of trapped ions have provided a broad basis for experimental realization of quantum information processing and quantum simulation. Current experiments incorporate cutting-edge technologies in laser systems, optical components, conventional and microfabricated ion traps, and classical control. Leveraging the experimental progress towards larger, more complex experiments will require an even higher level of sophistication in all these technologies.

The Workshop on Ion Trap Technology will bring together experts on trapped-ion physics, laser optics, MEMS technology, packaging, and microsystems integration, to review current developments and explore future directions. The focus will be on ion traps and related technology but will keep in mind the goals of advanced quantum processing and simulation. Balanced oral presentations about the current state of the art and future directions, coupled with poster presentations that will be on display for the duration, should help promote useful discussions and help establish future research directions.

**DATES AND LOCATION:**

Workshop dates: February 16 and the morning of February 17, 2011. Location: NIST, 325 Broadway, Boulder, CO, 80305. Information about registration and accommodations will be forthcoming. This workshop will be held immediately preceding the SQuInT 2011 meeting, which will be held at a local hotel in Boulder, starting Thursday afternoon, February 17, ending mid-day, February 20. Information about this meeting will also be forthcoming (SQuInT website is <http://www.squint.org/>)

**ORAL PRESENTATIONS:**

Oral presentations are by invitation and serve as an underpinning for discussions during the workshop. The program committee will strive to have covered the current state of the art in experiments and also provide a broad perspective. To accomplish this, we plan on having 3 invited overview talks [(30+5) min], one on the status of trapped ion physics in Europe (Rainer Blatt, Univ. Innsbruck, Austria) one on new developments in neutral atoms (Markus Greiner, Harvard) and one on the broader theoretical perspectives (Peter Zoller, Univ. Innsbruck, Austria). Current US research efforts will be covered by shorter [(20+5) min] talks by spokespersons from GTRI/Duke University, University of Maryland, MIT, NIST and Sandia National Labs. These talks will be complemented by [(20+5) min] talks from 6 more invited speakers, Boris Blinov (Univ. Washington), Ken Brown (Georgia Tech), John Chiaverini (Lincoln Labs/MIT), Hartmut Haeffner (Berkeley), Dave Kielpinski (Griffith Univ., Australia) and Tobias Schaetz (MPQ Garching, Germany).

**POSTERS:**

The poster sessions are a very important part of the workshop and will be open through all breaks during the conference. Poster space is limited to approximately 50 posters and will be filled with the intent of giving broad coverage and preference being given to early submissions. Space per poster is 4' x 4' (1220 mm x 1220 mm). The organizers will reserve the right to decline poster presentations they deem to not serve the purpose of the workshop. Please send your poster abstract submission to [dil@boulder.nist.gov](mailto:dil@boulder.nist.gov).

*PARTICIPANT LIMITS and DEADLINES:*

Deadline for registration: 2/11/2011 or when the limit of 70 participants is reached.  
Submission deadline for posters: 2/4/11 or when the limit of 50 poster submissions is reached. Deadline for group-rate lodging at the Millennium Harvest House Hotel: 1/16/2011 (mention "NIST SQuInT conference" for group rate, use group code 1102NISTNM for web-booking).

*WORKSHOP WEBSITE:*

Please go to <http://www.nist.gov/pml/div688/grp10/ionworkshop.cfm> for the tentative program and more information. The website will be updated and abstracts will be added as they become available.

*REGISTRATION:*

A secure web-form for registration will become available on the conference website soon. The same web-form will also handle the information transfer necessary for foreign participants to comply with NIST security rules. Personal data transfer will be encrypted to protect participant privacy. Please, also make sure you understand how to obtain your visitor pass and get into NIST on the first day of the workshop (details are posted on the workshop website). You will need **about 20 min extra time** to check in at the visitor center.

*CO-CHAIRS:*

Dietrich Leibfried (NIST)  
David Wineland (NIST)

*PROGRAM COMMITTEE:*

Matthew Blain (Sandia)  
Jungsang Kim (Duke)  
Dietrich Leibfried (NIST)  
Christopher Monroe (Maryland)  
Richard Slusher (GeorgiaTech, GTRI)  
David Wineland (NIST)

*SPONSORS:*

NIST, ARO, NSA