

# Stereoscopic Displays and Applications XXI

3 days during 17-21 January 2010 San Jose Convention Center San Jose, California, USA

Conference Demonstrations Course

Held annually as part of:

*IS&T/SPIE's Annual Symposium*

**Electronic  
Imaging**  
Science and Technology

Autostereoscopic Displays  
Stereoscopic Cinema  
3D TV and Video  
Applications of Stereoscopy  
Volumetric Displays  
Stereoscopic Imaging  
Integral 3D Imaging  
2D to 3D Conversion  
Human Factors  
Stereoscopic Cameras  
Content Creation  
Stereoscopic Image Quality  
and much more!

Technical Papers  
Keynote Address  
Discussion Forum  
Demonstration Session  
3D Theater  
Poster Session  
Short Course

Abstracts due  
22 June 2009

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[www.electronicimaging.org](http://www.electronicimaging.org)

[www.stereoscopic.org](http://www.stereoscopic.org)

See Advance Program in November 2009 for confirmed conference dates.

# Stereoscopic Displays and Applications XXI (EI101)

Part of the IS&T/SPIE International Symposium on Electronic Imaging  
17-21 January 2010 • San Jose Convention Center • San Jose, California United States

Conference Chairs: **Andrew J. Woods**, Curtin Univ. of Technology (Australia); **Nicolas S. Holliman**, Durham Univ. (United Kingdom); **Neil A. Dodgson**, Univ. of Cambridge (United Kingdom)

Founding Chair: **John O. Merritt**, The Merritt Group

Program Committee: **Gregg E. Favalora**, Actuality Systems, Inc. (United States); **Takashi Kawai**, Waseda Univ. (Japan); **Janusz Konrad**, Boston Univ. (United States); **Shojiro Nagata**, Japan 3D Forum/InterVision (Japan); **Vivian K. Walworth**, Jasper Associates (United States); **Chris Ward**, Lightspeed Design, Inc. (United States); **Michael A. Weissman**, TrueVision Systems (United States); **Samuel Z. Zhou**, IMAX Corp. (Canada)

This conference focuses on recent advances in stereoscopic systems, including 3D display hardware, computer software, algorithms, image acquisition, and applications illustrating the use of stereoscopic 3D displays. We also consider human factors and other issues that guide the development and use of 3D displays. In both real-world and computer-generated imaging applications, stereoscopic 3D display technologies can improve task performance, enhance the user's ability to perceive objects in their correct spatial locations, and to identify objects efficiently and accurately. The conference brings together practitioners and researchers from industry and academia to facilitate an exchange of current information on stereoscopic imaging topics. Hardware demonstrations of 3D technologies and applications are strongly encouraged at the conference demonstration session. Large-screen stereoscopic projection (both still and video) will be available, and presenters are encouraged to make full use of these facilities during their presentations. A peer-review process is available for academic authors. Papers are solicited for, but not limited to, the following topics:

## Applications of stereoscopic displays

- especially novel applications and user trials of existing applications. Application areas include scientific visualization, medical imaging, games, television, entertainment, communications, training, CAD/CAM, molecular modeling, teleoperation, telepresence, industrial inspection, and advertising.

## Advances in true 3D display technologies

- including autostereoscopic displays, super and high-density multi-view displays, volumetric displays, mobile 3D displays, stereoscopic projection, & electro-holography.

## Stereoscopic Systems design

- for teleoperation, telerobotics, telesurgery, virtual reality, augmented reality, mobile devices, game systems, consumer and professional broadcast, content delivery and interaction technologies.

## Stereoscopic 3D digital cinema

- including production, presentation, and case studies.

## Stereoscopic imaging

- stereoscopic and multi-view computer graphics, including gaming
- image processing and compression of stereoscopic imagery
- stereoscopic image synthesis: 2D to 3D conversion, depth map generation, multi-viewpoint generation
- software and hardware issues for computer display of stereoscopic images
- methods for recording, playback, transmission, and processing of stereoscopic video.

## 3D image acquisition and generation techniques

- single- and multi-lens camera systems
- motion parallax, volume projection, graphical construction, stereoscopic computer graphics, computational photography, and other stereoscopic image generation techniques
- guidelines for stereoscopic content development.

## Human factors & user-interface issues

- task performance comparisons between stereoscopic and non-stereoscopic displays
- evaluation methodologies (e.g., depth-acuity measurement) and task-performance testing
- benefits for processing and compression of stereoscopic images
- perceptual and cognitive guidelines
- 3D remote manipulation and control of viewpoint
- ortho-stereo, hyper-stereo, and the geometry of 3D perceptual space.

## Standards for stereoscopic imaging

- including hardware interfaces, software and transmission formats, and content production parameters.

Visit the SD&A conference website for more information:  
<http://www.stereoscopic.org>

**Abstract Due Date: 22 June 2009**  
**Manuscript Due Date: 21 December 2009**

# Submission of Abstracts for IS&T/SPIE Electronic Imaging

Abstract (500 words) and Summary (200 words) Due Date: 22 June 2009  
Manuscript Due Date: 21 December 2009

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## **1. By submitting an abstract, I agree to the following conditions:**

- An author or coauthor (including keynote, invited, and solicited speakers) will register at the reduced author registration rate, attend the meeting, and make the presentation as scheduled. (Current IS&T/SPIE Members receive an additional discount on the registration fee.)
- Authors and coauthors attending the meeting must obtain funding for their registration fees, travel, and accommodations, independent of IS&T/SPIE, through their sponsoring organizations before submitting abstracts.
- All clearances, including government and company clearance, have been obtained to present and publish. If you are a DoD contractor, allow at least 60 days for clearance.
- IS&T/SPIE are authorized to circulate your abstract to conference committee members for review and selection purposes.
- Accepted abstracts may be published with the printed Final Programs or on a CD-ROM for distribution at the meeting. Please submit only 500-word abstracts that are suitable for publication.
- Please also submit a 200-word summary suitable for early release. If accepted, this abstract text will be published prior to the meeting in online or printed programs promoting the conference. It will also be published in a summary digest and distributed at the meeting with the Final Technical program.
- A full-length manuscript (8-12 pages) for any accepted oral or poster presentation (including keynote, invited, and solicited presentations) will be submitted for publication in the Digital Library, printed conference Proceedings, and CD-ROM.

## **2. Prepare to submit:**

- Have all contact information (full names, affiliations, addresses, phone numbers, and emails) for your coauthors ready.
- Only original material should be submitted.
- Abstracts should contain enough detail to clearly convey the approach and the results of the research.
- Commercial papers, papers with no new research/development content, and papers where supporting data or a technical description cannot be given for proprietary reasons should not be submitted, and will not be accepted for presentation in this conference.

## **3. Submit your abstract online:**

Browse to locate the conference to which you are submitting at:

<http://electronicimaging.org>

Click on "Submit an abstract."

If you have a MySPIE account, sign in using your username and password. First-time users of MySPIE can create a new account by clicking on the [Create an Account](#) link.

## **Review, Notification, and Program Placement**

- To ensure a high-quality conference, all abstracts will be reviewed by the Conference Chair/Editors for technical merit and suitability of content. Conference Chair/Editors reserve the right to reject for presentation or publication any paper that does not meet content or presentation expectations.
- Conference Chair/Editors are expected to assess manuscripts for technical merit, suitability of content, and clarity. The process for assessing manuscripts for publication in proceedings is managed differently by chairs/editors of different conferences. Conference Chair/Editors may require one or more manuscript revisions before approving publication, and reserve the right to reject for publication any paper that does not meet content or quality expectations or manuscript requirements. IS&T/SPIE's decision on whether to publish a manuscript is final.
- Applicants will be notified of abstract acceptance and sent manuscript instructions by email no later than 11 September 2009.
- Final placement in an oral or poster session is subject to the Chairs' discretion. Instructions for oral and poster presentations will be sent to the person marked as Contact Author by email.

## **Proceedings and Digital Library**

- Full-manuscripts will be Chair/Editor-approved and published in the *Proceedings* and in Digital Library.
- Manuscript instructions will be emailed to the person marked as contact author for the paper and are also available from the "Information for Authors" link on the conference website.
- Authors must be authorized to transfer copyright of the manuscript to SPIE/IS&T, or provide a suitable publication license. Authors reserve the right to expand and revise the manuscript for future publication.
- Only papers presented at the conference will be published in the conference Proceedings and Digital Library.
- Published papers are indexed in leading scientific databases including INSPEC, Ei Compindex, Chemical Abstracts, International Aerospace Abstracts, ISI Index to Scientific and Technical Proceedings and NASA Astrophysical Data System, and are searchable in the Digital Library. Full manuscripts are available to all Digital Library subscribers.