

# Stereoscopic Displays and Applications XXII

24-26\* January 2011 ♦ Hyatt Regency San Francisco Airport Hotel ♦ South San Francisco, 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  
28 June 2010!

extended to 19 July 2010

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\* See Advance Program in November 2010 for confirmed conference dates.

# Stereoscopic Displays and Applications XXII (EI101)

*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)

*Program Committee:* **Gregg E. Favalora**, Optics for Hire (United States); **Takashi Kawai**, Waseda Univ. (Japan); **Janusz Konrad**, Boston Univ. (United States); **Vivian K. Walworth**, StereoJet, Inc. (United States); **Chris Ward**, Lightspeed Design, Inc. (United States); **Michael A. Weissman**, TrueVision Systems (United States); **Samuel Z. Zhou**, IMAX Corp. (Canada)

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

Due Dates:

Abstract (500 words) and Summary (200 words): ~~28 June 2010~~ **extended to 19 July 2010**

Manuscript for Post-Meeting Proceedings: **13 December 2010**

## Abstract Notes:

- Please be sure to read the SD&A structured abstract guidelines to give your paper the best chance of acceptance: <http://www.stereoscopic.org/sag.html>
- The submission wizard requires a text-only version of your abstract. Uploading a file attachment with photos, figures, equations, etc. is optional. Please do not upload a file attachment that is text only.

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 and 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 Submission

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

An author or coauthor (including keynote, invited, oral, and interactive paper presenters) will:

- Register at the reduced author registration rate (current IS&T/SPIE Members receive an additional discount on the registration fee).
- Attend the meeting.
- Make the presentation as scheduled in the program.
- Submit a full-length manuscript (6 pages minimum) for publication in the Digital Library, conference Proceedings, and CD-ROM compilations.
- Obtain funding for their registration fees, travel, and accommodations, independent of IS&T and SPIE, through their sponsoring organizations.
- Ensure that all clearances, including government and company clearance, have been obtained to present and publish. If you are a DoD contractor in the USA, allow at least 60 days for clearance.

## Submit an abstract and summary online at <http://electronicimaging.org>:

- **Abstract for Technical Review:** Please see the individual conference Calls for Papers for abstract length requirements. IS&T and SPIE are authorized to circulate your abstract to conference committee members for review and selection purposes.
- **200-Word Summary:** Please also submit a 200-word text summary suitable for early release. If accepted, this summary text will be published prior to the meeting in the online or printed programs promoting the conference.
- 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 will not be accepted for presentation in this conference.
- Please do not submit the same, or similar, abstracts to multiple conferences.

## Review, Notification, and Program Placement Information

- To ensure a high-quality conference, all submissions will be assessed by the Conference Chair/Editor for technical merit and suitability of content.
- Conference Chair/Editors reserve the right to reject for presentation any paper that does not meet content or presentation expectations.
- The contact author will receive notification of acceptance and presentation details by e-mail no later than 17 September 2010.
- If your paper is accepted and you require a visa to travel to the U.S., please request an invitation letter from the link at <http://spie.org/x37840.xml> as soon as you are notified of acceptance.
- Final placement in an oral or interactive paper session is subject to the Chairs' discretion.

## Proceedings and Digital Library Information

- Conference Chair/Editors may require manuscript revision before approving publication and reserve the right to reject for publication any paper that does not meet acceptable standards for a scientific publication. Conference Chair/Editors' decisions on whether to allow publication of a manuscript is final.
- Manuscript instructions are available from the "Author/Presenter Information" link on the conference website.
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- Only papers presented at the conference and received according to publication guidelines and timelines will be published in the conference Proceedings and Digital Library.
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