CALL FOR PAPERS

SPIE. OPTICAL METROLOGY

26–29 June 2023
ICM—International Congress Center Messe
München, Germany

Abstract Due Date: 8 FEBRUARY 2023

Automated Visual Inspection and Machine Vision V (OM106)

Conference Chairs: **Jürgen Beyerer,** Fraunhofer-Institut für Optronik, Systemtechnik und Bildauswertung IOSB (Germany), Karlsruher Institut für Technologie (Germany); **Michael Heizmann,** Karlsruher Institut für Technologie, Institute of Industrial Information Technology (Germany)

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This conference addresses image acquisition and image exploitation topics to solve visual inspection and machine vision tasks automatically. Since elaborated approaches for acquiring images constitute the crucial base to successfully accomplish inspection tasks, particularly illumination, optics, sensors, and the complete acquisition setup composed of these ingredients are within the focus of the conference. Moreover, to extract the inspection-relevant information from images, signal processing and exploitation methods that account for the physical formation of the images are of great interest. As many inspection tasks cannot be solved based on a single image, frequently it is necessary to acquire sequences of images that have to be fused in an adequate manner to draw a final inspection decision. Therefore, the question is not only how to acquire appropriate single images, but how to acquire controlled image series that comprise sufficient information with respect to the inspection task and how such image series can be exploited efficiently.

GENERAL ITEMS

- automated visual inspection
- machine vision
- robust, high performance inspection
- visual quality monitoring and control
- image acquisition and exploitation.

METHODOLOGY

- image data based on diverse optical properties of materials (reflectance, roughness, spectrum, complex refraction index, etc.)
- illumination techniques
- deflectometry
- mathematical models and methods
- image series, image fusion and active vision
- image processing and exploitation methods
- detection and classification
- physically-based image formation models
- pattern recognition
- light field methods
- event-based vision
- machine learning for automated visual inspection.

APPLICATIONS

- automated inspection of industrially produced goods
- material recognition and verification
- detection of surface defects
- image-based measurement and control
- inspection of specular surfaces
- safety, security, and biometrics
- medicine and biology
- other application fields.

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Important dates

Event	Date
Abstracts due	8 February 2023
Registration opens	28 March 2023
Authors notified and program posts online	24 April 2023
Submission system opens for manuscripts and poster PDFs	3 April 2023
Registration opens	April 2023
Poster PDFs due (for spie.org preview and publication)	30 May 2023
Manuscripts due	7 June 2023

What you will need to submit

- Title
- Author(s) information
- 250-word abstract for technical review
- 100-word summary for the program
- Keywords used in search for your paper (optional)
- Your decision on publishing your presentation recording to the SPIE Digital Library
- Some conferences may indicate additional requirements in the call for papers

Note: Only original material should be submitted. Commercial papers, papers with no new research/development content, and papers with proprietary restrictions will not be accepted for presentation.

How to submit your abstract

- Visit the conference page: www.spie.org/om106
- Choose one conference that most closely matches the topics of your abstract. You may submit more than one abstract, but submit each abstract only once
- Click the title of the conference to view the full description and submit by clicking the “Submit An Abstract” button on that page
- Sign in to your SPIE account, or create an account if you do not already have one
- Follow the steps in the submission wizard until the submission process is completed

Submission agreement

All presenting authors, including keynote, invited, oral, and poster presenters, agree to the following conditions by submitting an abstract:

- Register and pay the author registration fee
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- Poster presenters: submit a poster PDF and optional preview video, by the advertised due dates, for publication in the Proceedings of SPIE in the SPIE Digital Library; poster PDFs may also be published and viewable in the spie.org programme during and immediately after the event
- Submit a manuscript by the advertised due date for publication in the Proceedings of SPIE in the SPIE Digital Library
- Obtain funding for registration fees, travel, and accommodations
- 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
- Attend the meeting
- Present at the scheduled time

Review and program placement

- To ensure a high-quality conference, all submissions will be assessed by the conference chair/editor for technical merit and suitability of content
- Conference chairs/editors reserve the right to reject for presentation any paper that does not meet content or presentation expectations
- Final placement in an oral or poster session is subject to chair discretion

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