High technology in urology includes many new but routine uses of light sources and light detection systems for diagnosis and treatment, including their combination as feedback-system. Selective photo diagnosis and phototherapy are under investigation or on their way to clinical use. Endoscopic approaches and robotic-assisted light applications, enable minimally invasive and high-precision tissue differentiation, thus supporting cutting and ablation during surgery. Further energy-based treatments (RF, HIFU, ...) are also being applied for tissue destruction in urology.

This conference covers the use of lasers and thermal energy-based technologies for treatment and light excitation and detection for diagnosis in urology. Attendees (scientists, engineers, and clinicians) are encouraged and motivated to share ideas, experiments and technical information in this interdisciplinary field. Regarding the diversity of experiments and studies, non-positive results should be presented and discussed.

Papers are solicited in urological applications of therapeutic and diagnostic modalities including, but not limited to, the following:

**LASERS AND LIGHT SOURCES FOR THERAPY AND DIAGNOSIS**
- Fundamental laser-cell/tissue interactions in urological applications
- Laser coagulation/ablation/resection of tumors in the bladder, kidney, ureter, and renal pelvis
- Photodynamic therapy of upper and lower urinary tracts
- Lithotripsy with lasers, shockwave, high-intensity focused ultrasound (HIFU), and pneumatic systems

**OTHER ENERGY FORMS FOR TISSUE TREATMENT**
- Minimally invasive surgical techniques including radio frequency, microwave, HIFU, cryo, plasma, and irreversible electroporation (IRE)
- Tissue treatment effects and healing responses after energy-based treatments

**TISSUE IMAGING FOR DIAGNOSTICS**
- Cellular/molecular imaging, probing, and optical biopsy in urology
- Artificial phantoms for reproducible experiments
- Pre-clinical/clinical applications of optical imaging, including optical coherence tomography (OCT), photoacoustic tomography (PAT), fluorescence, polarization, confocal, spectroscopy, microscopy, and photodynamic diagnosis (PDD)
- MRI, CT, PET, ultrasound, and terahertz imaging for the detection of urological diseases
- Diagnostic endomicroscopy: OCT, CARS, SRS, FLIM, confocal fluorescence, multiphoton

**ADVANCED TECHNOLOGY IN UROLOGY**
- Novel designs and applications of optical fibers and endoscopic delivery devices
- Robotic-assisted surgery including radical prostatectomy and nephrectomy
- 3-D modeling and simulation of surgical procedures
- Optical nerve stimulation for dysfunctional urinary systems
- Nanoparticle-assisted and image-guided therapy
- Use of artificial intelligence (AI) in urology, e.g., prognosis, differentiation, ...
- AR/VR in the urological OR
- training, teaching, and education in urology
- Clinical trials (single case experience to phase II studies)

**BSC BEST PAPER AWARDS**
Boston Scientific, Corp. will sponsor the “BSC Best Paper Award” at this conference.

**Judging and Requirements**
Presentations and manuscripts will be judged based on scientific merit and potential clinical impact. Candidates for the award need to be the presenting author, a full-time student or resident in urology, must submit an extended technical summary (1-3 pages) of their best results at the time of Abstract submission, and must present their papers at the conference. Cash awards will be delivered after the publication of the conference proceedings volume.
Present your research at SPIE Photonics West

Follow the instructions below to develop a successful abstract for submission to a conference and review policies for publication in the Proceedings of SPIE in the SPIE Digital Library. Submissions subject to chair approval.

**Important dates**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Abstracts due</td>
<td>19 July 2023</td>
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<tr>
<td>Registration opens</td>
<td>October 2023</td>
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<tr>
<td>Authors notified and program posts online</td>
<td>9 October 2023</td>
</tr>
<tr>
<td>Submission system opens for manuscripts and poster PDFs*</td>
<td>27 November 2023</td>
</tr>
<tr>
<td>Poster PDFs due for spie.org preview and publication</td>
<td>3 January 2024</td>
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<tr>
<td>Manuscripts due</td>
<td>10 January 2024</td>
</tr>
<tr>
<td>Advance upload deadline for oral presentation slides**</td>
<td>25 January 2024</td>
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</tbody>
</table>

*Contact author or speaker must register prior to uploading
**After this date slides must be uploaded onsite at Speaker Check-in

**What you will need to submit**

- Presentation title
- Author(s) information
- Speaker biography
- 250-word abstract for technical review
- 100-word summary of abstract for display in the program
- Keywords used in search for your paper (optional)
- Check the individual conference call for papers (requirements may vary)
- Manuscripts and presentations for multi-track applications
- Poster PDFs due for spie.org preview and publication

**Submission agreement**

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

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- Each poster must have a unique presenter; one person may not present more than one poster per session.
- Email messaging for the conference series.
- 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.
- 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.

**Publication of Proceedings in the SPIE Digital Library**

- Only manuscripts, presentations, and posters presented at the conference and received according to publication guidelines and due dates will be published in the Proceedings of SPIE in the SPIE Digital Library.
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**SYMPOSIUM CHAIRS**

**Sergio Fantini**
Tuffs Univ.
(United States)

**Paola Taroni**
Politecnico di Milano
(Italy)

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**Presentations with proprietary restrictions will not be accepted for papers, papers with no new research/development content, and papers that highlight the innovative use of tools, and techniques for healthcare from bench to bedside using the latest photonics technologies.**

**Translational research:** Papers that highlight the transition from bench to bedside using the latest photonics technologies, tools, and techniques for healthcare.

**3D printing:** Papers that highlight the innovative use of optics and photonics in multidisciplinary applications for multidimensional manufacturing.