

PROCEEDINGS OF SPIE

# ***Oxide-based Materials and Devices XVII***

**David J. Rogers**  
**Féréchtéh H. Teherani**  
*Editors*

**18–21 January 2026**  
**San Francisco, California, United States**

*Sponsored and Published by*  
SPIE

**Volume 13897**

Proceedings of SPIE 0277-786X, V. 13897

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

The papers in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. Additional papers and presentation recordings may be available online in the SPIE Digital Library at [SPIDigitalLibrary.org](http://SPIDigitalLibrary.org).

The papers reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from these proceedings:

Author(s), "Title of Paper," in *Oxide-based Materials and Devices XVII*, edited by David J. Rogers, Féréchtéh H. Teherani, Proc. of SPIE 13897, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510697119

ISBN: 9781510697126 (electronic)

Published by

**SPIE**

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time)

[SPIE.org](http://SPIE.org)

Copyright © 2026 Society of Photo-Optical Instrumentation Engineers (SPIE).

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of fees. To obtain permission to use and share articles in this volume, visit Copyright Clearance Center at [copyright.com](http://copyright.com). Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher.

Printed in the United States of America by Curran Associates, Inc., under license from SPIE.

Publication of record for individual papers is online in the SPIE Digital Library.

**SPIE. DIGITAL  
LIBRARY**

[SPIDigitalLibrary.org](http://SPIDigitalLibrary.org)

---

**Paper Numbering:** A unique citation identifier (CID) number is assigned to each article in the Proceedings of SPIE at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:

- The first five digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc. The CID Number appears on each page of the manuscript.

# Contents

v *Conference Committee*

---

## GALLIUM OXIDE I

---

13897 02 **Characterizing  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> by photoluminescence and Raman mapping (Invited Paper)**  
[13897-8]

---

## PHOTODETECTORS

---

13897 03 **Transparent ceramic materials for infrared sensor applications** [13897-13]

---

## VARIOUS OXIDES AND APPLICATIONS II

---

13897 04 **VO<sub>2</sub> thermo-chromic behavior mediated by the hyperthermia of magnetic silica composite (Invited Paper)** [13897-23]

13897 05 **Doped IR-transparent Y<sub>3</sub>Fe<sub>5</sub>O<sub>12</sub> (YIG) ceramics for optical applications** [13897-25]

13897 06 **Laser-based production of reduced graphene oxide coatings on metallic bipolar plates for improved corrosion resistance and interfacial contact resistance in PEM-FC** [13897-26]

---

## VARIOUS OXIDES AND APPLICATIONS III

---

13897 07 **Intersubband transition in the polar ZnO/BexMgyZn<sub>1-x-y</sub>O multiple quantum well structures with wide bandgap barrier (Invited Paper)** [13897-28]

13897 08 **Influence of additives on the laser-based sintering of LLZO thin films for solid-state batteries**  
[13897-30]

---

## VARIOUS OXIDES AND APPLICATIONS IV

---

13897 09 **Advanced oxide materials synthesis for photonic and energy applications (Invited Paper)**  
[13897-54]

13897 0A **Phase separation in ferroelectrics with blurred phase transition** [13897-37]

**POSTER SESSION**

---

- 13897 0B **Plasma model of crystals based on potassium dihydrogen phosphate** [13897-38]
- 13897 0C **Performance investigation of CO<sub>2</sub> sensing in TiO<sub>2</sub> thin-films by W- incorporation** [13897-41]
- 13897 0D **Metal oxide-decorated AlN surface acoustic wave sensors for rapid room-temperature detection of NH<sub>3</sub> and NO<sub>2</sub>** [13897-44]