

MATERIALS RESEARCH SOCIETY
SYMPOSIUM PROCEEDINGS VOLUME 934

Silicon-Based Microphotonics

April 17 – 21, 2006
San Francisco, California, USA

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com

ISBN: 978-1-55899-891-9

Some format issues inherent in the e-media version may also appear in this print version.

CAMBRIDGE UNIVERSITY PRESS
Cambridge, New York, Melbourne, Madrid, Cape Town,
Singapore, São Paulo, Delhi, Tokyo, Mexico City

Cambridge University Press
32 Avenue of the Americas, New York, NY 10013-2473, USA

www.cambridge.org

Materials Research Society
506 Keystone Drive, Warrendale, PA 15086
<http://www.mrs.org>

©Materials Research Society 2028

This publication is in copyright. Subject to statutory exception
and to the provisions of relevant collective licensing agreements,
no reproduction of any part may take place without the written
permission of Cambridge University Press.

First published 2028

CODEN: MRSPDH

ISBN: ; 9: /3/77: ; ; /: ; 3/;

Cambridge University Press has no responsibility for the persistence or
accuracy of URLs for external or third-part Internet Web sites referred to
in this publication and does not guarantee that any content on such Web sites
is, or will remain, accurate or appropriate.

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Plasma Synthesis and Surface Passivation of Silicon Quantum Dots with Photoluminescence Quantum Yields Higher Than 60%	1
<i>Jurbergs, David;Kortshagen, U.;Mangolini, Lorenzo;Rogojina, Elena</i>	
Microphotonics Applications of Silicon Microspheres	7
<i>Serpengüzel, Ali</i>	
Low-Temperature Hetero-Epitaxial Growth of Ge on Si by High Density Plasma Chemical Vapor Deposition	13
<i>Carroll, Malcolm;Sheng, Josephine;Verley, Jason</i>	
Visible-Blind UV/IR Photodetectors Integrated on Si Substrates	20
<i>Bensaoula, Abdelhak;Boney, John;Pillai, Rajeev;Starikov, David</i>	
Modeling Misfit Dislocation Arrays for the Growth of Low-Defect Density AlSb on Si	26
<i>Balakrishnan, G.;Dawson, L.R.;Huang, S.H.;Huffaker, D.L.;Jallipalli, A.;Khoshakhlagh, A.</i>	
Spatially Resolved Characterization of Microstructure, Defects and Tilts in GaN Layers Grown on Si(111) Substrates by Maskless Cantilever Epitaxy	32
<i>Barabash, O.;Barabash, R.;Budai, J.;Einfeldt, S.;Figge, S.;Hommel, D.;Ice, G.;Liu, W.;Roder, C.</i>	
Theoretical Investigation of Strain-Balanced GaP_{1-x}N_x/GaAs_{1-y}N_y Superlattices Lattice-Matched to Si(001) for 1.5-1.8 EV Photonic Applications	40
<i>Bhusal, L.;Freundlich, A.;Zhu, Wenkai</i>	
Oxidation of Structured Silicon Thin Films for Inverse Silicon Square Spiral Photonic Crystal Fabrication	46
<i>Brett, Michael;Summers, Mark</i>	
Active Photonic Crystals Based Multiplexer	52
<i>Dardano, Principia;Mocella, Vito;Moretti, Luigi;Rendina, Ivo;Sirleto, Luigi</i>	
Thermo-Electrical Analysis of an Optoelectronic Modulator Integrated in a SOI Rib Waveguide Operating in the Gb/s Regime	58
<i>Coppola, Giuseppe;Iodice, Mario;Zaccuri, Rocco</i>	
High Sensitivity Sensor Based on Porous Silicon Waveguide	64
<i>Rong, Guoguang;Saarinen, Jarkko;Sipe, John;Weiss, Sharon</i>	