

SEMTherm 2017: International Conference on Microtechnology & Thermal Problems in Electronics (MICROTHERM 2017) and International Conference on Smart Engineering of New Materials (SENM 2017)

Journal of Physics: Conference Series Volume 1033

Lodz, Poland
26 - 29 June 2017

Editors:

Ewa Raj
Katarzyna Znajdek

ISBN: 978-1-5108-6408-5
ISSN: 1742-6588

Printed from e-media with permission by:

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



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

Copyright© (2017) by the Institute of Physics
All rights reserved. The material featured in this book is subject to
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2018)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Table of contents

Volume 1033

SEMTherm 2017: International Conference on Microtechnology & Thermal Problems in Electronics (MICROTHERM2017) and International Conference Smart Engineering of New Materials (SENM2017)

26–29 June 2017, Lodz, Poland

Accepted papers received: 17 May 2018

Published online: 1 June 2018

Preface

[SEMTherm 2017: International Conference on Microtechnology & Thermal Problems in Electronics \(MICROTHERM2017\) and International Conference Smart Engineering of New Materials \(SENM2017\)](#)

[Peer review statement](#)

Papers

[Thermal model of the IGBT module](#)

Paweł Górecki, Krzysztof Górecki and Janusz Zarębski.....1

[Numerical analysis and optimization of \$\text{Cu}_2\text{O}/\text{TiO}_2\$, \$\text{CuO}/\text{TiO}_2\$, heterojunction solar cells using SCAPS](#)

Paulina Sawicka-Chudy, Maciej Sibiński, Grzegorz Wisz, Elżbieta Rybak-Wilusz and Marian Cholewa.....8

[Power electronic supply system with the wind turbine dedicated for average power receivers](#)

Tomasz Widorski and Adam Skrzypek.....18

[Investigations of the influence of frequency on power losses in ferrite cores](#)

Krzysztof Górecki and Kalina Detka.....31

[Modelling nonisothermal electrical characteristics of ferrite cores](#)

Krzysztof Górecki and Krzysztof Górski.....38

[Researches on Tie Rod Ends Lubricated by Grease with TiO₂ and ZrO₂ Nanoparticles](#)

Marek Wozniak, Krzysztof Siczek, Przemysław Kubiak, Piotr Jozwiak and Krystian Siczek.....45

[The influence of PVD/CVD processes parameters on Ni catalyst nanoparticles sizes](#)

Izabela Stępińska, Elżbieta Czerwosz, Mirosław Kozłowski and Piotr Dłużewski.....55

[Carburizing treatment of low alloy steels: Effect of technological parameters](#)

Younes Benarioua.....64

[High content palladium nanocomposite carbon-palladium films](#)

Joanna Rymarczyk, Elżbieta Czerwosz, Piotr Dłużewski, Ryszard Diduszko and Mirosław Kozłowski.....72

[Conversion treatment of thin titanium layer deposited on carbon steel](#)

Younes Benarioua, Bogdan Wendler and Didier Chicot.....82