

4th International Conference on Advanced Materials Research and Manufacturing Technologies (AMRMT 2019)

IOP Conference Series: Materials Science and Engineering
Volume 647

Oxford, United Kingdom
8 - 11 August 2019

ISBN: 978-1-7138-0908-1
ISSN: 1757-8981

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.

This work is licensed under a Creative Commons Attribution 3.0 International Licence.
Licence details: <http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2020)

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

MATERIALS SCIENCE

| | |
|---|----|
| THERMAL LOADING EFFECT DURING MACHINING OF BOROSILICATE GLASS USING ECDM PROCESS | 1 |
| <i>R K Arya, A Dvivedi</i> | |
| IMPROVEMENT IN MACHINED SURFACE WITH THE USE OF POWDER AND MAGNETIC FIELD ASSISTED ON MACHINING ALUMINIUM 6061 ALLOY WITH EDM | 7 |
| <i>Arun Kumar Rouniyar, Pragya Shandilya</i> | |
| PREPARATION OF CARBON ENCAPSULATED MAGNETIC FECO ALLOY NANOPARTICLES SUPPORTED ON CARBON NANOTUBES FOR ENHANCED MICROWAVE ABSORPTION | 13 |
| <i>Guanming Yuan, Yong Su, Zhengwei Cui, Zhijun Dong, Xuanke Li</i> | |
| USING DEEP NEURAL NETWORKS TO PREDICT THE TENSILE PROPERTY OF CERAMIC MATRIX COMPOSITES BASED ON INCOMPLETE SMALL DATASET | 20 |
| <i>Gao Xiang, Li Guanghui, Tan Rong, Yao Leijiang</i> | |
| A NOVEL COUPLER DESIGN AND ANALYSIS WITH SHIELDING MATERIAL TESTS FOR A CPT SYSTEM OF ELECTRIC VEHICLES BASED ON ELECTROMAGNETIC RESONANT COUPLING..... | 28 |
| <i>J Duan, W Wang</i> | |
| MODELING THE ELECTRICAL CONDUCTIVITY OF NI _{1-X} FE _X -SDC COMPOSITE ANODE BY USING PSO-SVR..... | 39 |
| <i>J. L Tang, R. F Yang</i> | |
| MECHANISM AND RESEARCH ON PREPARATION OF ALN POWDER BY CARBON THERMAL REDUCTION METHOD..... | 45 |
| <i>L Y Wang, N Zhang</i> | |

MANUFACTURING TECHNOLOGIES

| | |
|--|----|
| SCALING BEHAVIOUR, OPTICAL AND PHOTOLUMINESCENCE PROPERTIES OF LA ₂ HF ₂ O FILMS WITH ANNEALING TREATMENTS | 50 |
| <i>Z Li, C Y Ma, Q Y Zhang</i> | |
| DEVELOPMENT OF A CUTTING FORCE PREDICTION MODEL FOR SILICA/PHENOLIC COMPOSITE IN MILL-GRINDING..... | 59 |
| <i>Zhang Chong, Zhang Tingyu, Wang Qi, Ling Li, Zhao Yibo</i> | |
| A RELIABLE DEFECT DETECTION METHOD FOR PATTERNED WAFER IMAGE USING CONVOLUTIONAL NEURAL NETWORKS WITH THE TRANSFER LEARNING | 65 |
| <i>Ji-Hee Lee, Jee-Hyong Lee</i> | |
| ANALYSIS OF ALLOWABLE ASSEMBLY FORCES FOR COMPOSITE LAMINATES | 73 |
| <i>Tingyu Zhang, Chong Zhang, Jianshe Zhao, Anru Guo</i> | |

| | |
|--|-----|
| EFFECTS OF PROCESS PARAMETERS ON CUTTING FORCE AND TOOL TEMPERATURE IN DRILLING BASED ON FINITE ELEMENT SIMULATION | 78 |
| <i>Yuan Gao, Jie Wang, Qi Wang, Xin Li, Tingyu Zhang, Yang Zhong</i> | |
| MODELLING THE BELT PERFORATION PROCESS WITH THE PIERCING PUNCH AND THE DIE IN THE CONTEXT OF THE CONSTRUCTION OF THE PUNCHING DIES..... | 84 |
| <i>D Wojtkowiak, K Talaska</i> | |
| MACHINING GROOVES IN SILICA GLASS BY USING PICOSECOND LASERS | 90 |
| <i>J K Jiao, J A Zhang, W W Zhang, R Popvawe</i> | |
| GRINDING DEVIATION ANALYSIS OF OFFSET FACE GEAR BASED ON INVOLUTE DISC WHEEL..... | 96 |
| <i>Yang Zhong, Jie Wang, Tingyu Zhang, Tianhe Pei, Yuan Gao, Wenhao Yao</i> | |
| THE INFLUENCE OF LOADING FORCE ON ULTRASONIC DRILLING GARNET FERRITE | 103 |
| <i>T H Pei, X F Zhang, Q Wang, T Y Zhang, Y Zhong, Y Y Zhu</i> | |
| PERFORMANCE ANALYSIS OF BY-PASS EXCITATION CABLE FORCE SENSOR | 111 |
| <i>Zhou Yishu, Zhang Jinning, Liu Chang, Cao Jinjin</i> | |

Author Index