CONTENTS

JOURNAL OF THE JAPAN WELDING SOCIETY
Vol.89 No.1 January 2020

Foreword .............................................................. SHINOZAKI Kenji 3
Technical Information — Special Issue —
The Innovation of Manufacturing Technology Using Laser
- Welding, Cutting, Modifying, Additive Manufacturing, Observing -
A Preface ............................................................ KADOI Kota
OHATA Mitsuru
NAKATANI Mitsuyoshi
IKEDA Rinsei 4

Present State and Trend of Laser Materials Processing ................. KATAYAMA Seiji 5

[ Part II ] National Projects on Laser Technologies
ImPACT: Innovation in Manufacturing with Palmtop High-power Pulsed Lasers ....... SANO Yuji 16
Development of High-brightness Blue Diode Laser ...................... TSUKAMOTO Masahiro 21
Control of Microstructure and Atomic Arrangement by Laser-type Metal Additive Manufacturing; SIP (1st Stage, 2nd Stage) Projects and METI ................. NAKANO Takayoshi 27
Regional New Growth Industry Creation Promotion Subsidy Project

Subjects and Efforts for Practical Use of Laser Beam Welding Applying Thick Steel Plate Fabrication .......... INOSE Koutarou 38
Making Better Cars by Using Laser Welding Techniques ............... SUGINO Hiroki 45
High Power Laser Welding in Vacuum ................................ KITANI Yasushi 51
Laser Cutting Process .............................................. OZAKI Hitoshi 56
Laser Processing System Using Direct Diode Laser ..................... FUJWARA Junji 63
Laser Surface Treatment that is Developing Towards the New Markets .......... EJIMA Ryo 70
Laser Cleaning Technology ............................................ HINO Makoto
HASHIMOTO Yoshiaki
MITOOKA Yutaka 75
Laser Additive Manufacturing Technologies ................................ KIDERA Masaaki 82
Inspection and Monitoring of Weld using Laser Ultrasonics .......... ASAI Satoru
NOMURA Kazufumi 87

WELNET for Young Members
Open lectures at high school and National Institute of Technology and
Report on the poster session in the JWS national meeting 2019 .................. 95

Calendar of Event ................................................................ 98
Society Announcements ..................................................... 99
Society News ..................................................................... 102

一般社団法人 溶接学会 平成30・31年度 理事・監事・幹事

理事（会長） 嶋崎賢二
理事 木田一幸
理事 加藤寛宏
理事 江崎茂夫
副会長 黒川明夫
専門委員会 大井健次
専門委員会 浅井知
専門委員会 石出孝
専門委員会 柿良哲生
専門委員会 小野数彦
専門委員会 北側彰一

Notice for photocopying
If you wish to photocopy any work of this publication, you have to get permission from the following organization to which licensing of copyright clearance is delegated by the copyright owner.
<All users except those in USA> Japan Academic Association for Copyright Clearance, Inc. (JAACC) 6-41 Akasaka 9-chome, Minato-ku, Tokyo 107-0052 Japan TEL: 81-3-3475-5618 FAX: 81-3-3475-5619 E-mail: info@jaacc.jp
<User in USA> Copyright Clearance Center, Inc. 222 Rosewood Drive, Danvers, MA 01923 USA
Phone: 1-978-750-8400 FAX: 1-978-646-8600