

# **Energy Conversion Technology**

Papers Presented at the AIAA Propulsion and Energy  
Forum 2020

Online  
24 – 28 August 2020

ISBN: 978-1-7138-2238-7

**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.**

The contents of this work are copyrighted and additional reproduction in whole or in part are expressly prohibited without the prior written permission of the Publisher or copyright holder. The resale of the entire proceeding as received from CURRAN is permitted.

For reprint permission, please contact AIAA's Business Manager, Technical Papers. Contact by phone at 703-264-7500; fax at 703-264-7551 or by mail at 34922 Uwytkug'Xcmg{'Ftkxg.'Uwky'422, Reston, VA 20191, USA.

# TABLE OF CONTENTS

## **MAGNETOHYDRODYNAMIC SYSTEMS AND ENERGY HARVESTING**

NUMERICAL STUDY OF PLASMA CHARACTERISTICS IN SUPERSONIC NOZZLE OF NONEQUILIBRIUM MAGNETOHYDRODYNAMIC GENERATOR .....	1
--	---

*Yuki Sakamoto, Ryo Sasaki, Takayasu Fujino*

RESISTANCE MEASUREMENTS OF A HIGH-VELOCITY OXY-FUEL POWERED MHD CHANNEL .....	17
---	----

*Lee Aspitarte, Hyoungkeun Kim, E. D. Huckaby, Mick Carter, Danylo B. Oryshchyn, Emily*

*Davis, Clinton R. Bedick, C. R. Woodside*

HARVESTING ELECTROMAGNETIC WAVES USING COPPER COIL FOR DEEP SPACE PROPULSION .....	28
--	----

*Rashickha D. S, Amrith Mariappan, Ajith Sukumaran, Tamilselvi R, Anush Ibrahim, Vr Sanal*

*Kumar*

CRYOGENIC SENSITIVITY OF TURBOELECTRIC COMMERCIAL AIRCRAFT WITH HTS PROPULSION MOTORS.....	38
--	----

*Kent A. Hamilton, Rodney Badcock*

CRYOGENIC CHARACTERIZATION AND MODELING OF SILICON SUPERJUNCTION MOSFET FOR POWER LOSS ESTIMATION.....	48
--	----

*Md Maksudul Hossain, Arman Ur Rashid, Rosten Sweeting, Yuqi Wei, Haider Mhiesan,*

*Dereje Woldegiorgis, H. Alan Mantooth*

## **Author Index**