

Pressure Gain Combustion

Papers Presented at the AIAA Aviation Forum 2022

Chicago, Illinois, USA and Online
27 June – 1 July 2022

ISBN: 978-1-7138-6001-3

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

MODELING AND DESIGN OF RDES

Experimental Investigation of Injector Sizing in the Rotating Detonation Rocket Engine	1
<i>Austin M. Burden, Robert F. Burke, Adam Kotler, Kareem A. Ahmed, Samuel Schuetz, Taha Rezzag</i>	
Computational Fluid Dynamic Optimization of an Experimental Rotating Detonation Rocket Engine Nozzle	8
<i>Daniel E. Paxson, Kenji Miki, Hugh D. Perkins, Shaye Yungster</i>	
Numerical Investigation of Rotating Detonation Engine with Injection from the Combustor Side Wall	20
<i>Takumi Sada, Akiko Matsuo, Eiji Shima, Hiroaki Watanabe, Akira Kawasaki, Ken Matsuoka, Jiro Kasahara</i>	

RDE OPERATION AND DETONATION WAVES

Experimental Research on Thrust Performance of Rotating Detonation Engine with Liquid Ethanol and Gaseous Oxygen	29
<i>Tomoki Sato, Kazuki Ishihara, Kentaro Yoneyama, Shiro Ito, Noboru Itouyama, Hiroaki Watanabe, Akira Kawasaki, Ken Matsuoka, Jiro Kasahara, Akiko Matsuo, Ikkoh Funaki</i>	
Development of an Automation System for a Detonation Tube.....	45
<i>Joshua Berson, Robyn Cideme, Rachel Hytovick, Kareem A. Ahmed</i>	
An Investigation on the Flame Acceleration of Oxygen Enriched Ethylene Flames.....	52
<i>Rachel Hytovick, Taylor R. Brown, Robert F. Burke, Taha Rezzag, Kareem A. Ahmed</i>	
Design of Injection and Methodology of Initiation in a High Aspect Ratio Detonation Channel	57
<i>Robyn Cideme, Joshua Berson, Rachel Hytovick, Kareem A. Ahmed</i>	

Author Index