

# **ISA@Montreal Symposium 2018**

ISA Volume 533

Montreal, Canada  
15-17 October 2018

ISBN: 978-1-5108-8878-4

**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© (2018) by International Society of Automation - ISA  
All rights reserved.

Printed by Curran Associates, Inc. (2019)

For permission requests, please contact International Society of Automation - ISA  
at the address below.

International Society of Automation - ISA  
67 Alexander Drive  
Research Triangle Park, NC 27709 USA

Phone: (919) 549-8411

Fax: (919) 549-8288

[info@isa.org](mailto:info@isa.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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

**A Study for Increase Energetic Efficiency in Liquid Ring Vacuum Pumps Applied in the Iron Ore Pelletizing Industry through Instrumentation and Control Strategies** ..... 1  
*Ronan Francis Barbosa Alves, Agnaldo José Reis, Sávio Augusto da Silva*

**Gradual Implementation of MES Platforms: Paving the way for Industry 4.0**..... 13  
*David St-Onge*

**Cybersecurity Considerations for Industrial IIoT** ..... 25  
*Mujtaba Khan*

**Immunity Approach for UAV Position and Velocity Estimation in GPS-denied Environment**..... 38  
*Mohanad Alnuaimi, Mario G. Perhinschi*

**Author Index**