

# **Railway Electrification Seminar 2015**

IET Seminar Digests 2015/15742

London, United Kingdom  
22 October 2015

ISBN: 978-1-5108-1982-5

**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© (2015) by the Institution of Engineering and Technology  
All rights reserved.

Printed by Curran Associates, Inc. (2016)

For permission requests, please contact the Institution of Engineering and Technology  
at the address below.

Institution of Engineering and Technology  
P. O. Box 96  
Stevenage, Hertfordshire  
U.K. SG1 2SD

Phone: 01-441-438-767-328-328  
Fax: 01-441-438-767-328-375

[www.theiet.org](http://www.theiet.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

<b>SAFER ELECTRIFICATION .....</b>	<b>1</b>
<i>R. Stainton</i>	
<b>PROJECT ENGINEERING A MAJOR ELECTRIFICATION PROJECT.....</b>	<b>16</b>
<i>C. Wilson</i>	
<b>ANTICIPATING AND MINIMISING RISK ON MAJOR RAIL ELECTRIFICATION PROJECTS .....</b>	<b>29</b>
<i>D. James-Daniels</i>	
<b>PRACTICAL APPLICATION OF CSM-REA SYSTEM SAFETY GWML ELECTRIFICATION .....</b>	<b>37</b>
<i>D. High, G. Davidson</i>	
<b>GREAT WESTERN TRACTION SYSTEM: MODERN INTEGRATION APPROACH .....</b>	<b>46</b>
<i>D. Hewings</i>	
<b>OLE SYSTEMS INTEGRATION FOR GWEP: PRINCIPLES, CHALLENGES, OPPORTUNITIES .....</b>	<b>64</b>
<i>G. Keenor</i>	
<b>EARTHING OF TNO RAILWAY FEEDER SITES.....</b>	<b>72</b>
<i>N. Pilling</i>	
<b>COMPOSITE BONDING PLANS.....</b>	<b>92</b>
<i>B. Paterson</i>	
<b>Author Index</b>	