

# **13th International Automobile Recycling Congress**

**(IARC 2013)**

**Brussels, Belgium  
13-15 March 2013**

**ISBN: 978-1-62748-559-3**

**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.**

Copyright© (2013) by ICM AG-International Congress & Marketing  
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact ICM AG-International Congress & Marketing  
at the address below.

ICM AG-International Congress & Marketing  
Schwaderhof 7  
5708 Birrwil Switzerland

Phone: 41 62 785 1000  
Fax: 41 62 785 1005

[info@icm.ch](mailto:info@icm.ch)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2634  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## **OPENING AND KEYNOTE SPEAKERS**

<b>End of Life Vehicles Public Agreement in Italy</b> .....	1
<i>Luigi Pelaggi</i>	

## **SESSION 2: COUNTY REPORTS I**

<b>Toyota Tsusho's Role in Recycling and Materials Management</b> .....	38
<i>Kazutaka Kitazume</i>	
<b>Shredder Results in France</b> .....	47
<i>Eric Lecointre</i>	
<b>The Importance and Benefits of ELV Recycling: A Case Study from Iran</b> .....	71
<i>Amir Reza Rajabi</i>	

## **SESSION 3: COUNTRY REPORTS II**

<b>ELV Management in Italy</b> .....	77
<i>Luciano Morselli, Fabrizio Passarini</i>	
<b>Establishment of Automobile Recycling System in Nigeria</b> .....	88
<i>Norihiko Kondo</i>	

## **SESSION 4: KEYNOTE SPEAKERS**

<b>Vision 2050: The New Agenda for Business</b> .....	99
<i>Olivier Vilaca</i>	
<b>Recovery of Scarce Metals from ELV A Bumpy Road Ahead?</b> .....	123
<i>Christina Meskers</i>	

## **SESSION 5: BEST AVAILABLE RECYCLING TECHNOLOGIES**

<b>Rare Earth Containing Components of E-Mobility</b> .....	139
<i>Peter Willis</i>	
<b>Sorting Plastics from Shredding Residue</b> .....	149
<i>Pal Lukacs</i>	

## **SESSION 6: IMPLEMENTING NEW LAWS AND REGULATIONS**

<b>Development of a Guidance Document on "How to Conduct a Shredder Campaign"</b> .....	159
<i>Knut Sander, Okopol GmbH, Stephanie Schiling</i>	
<b>Reaching 95% Recycling and Recovery at Acceptable Chain Cost by Industrialization of Post-shredding Processes</b> .....	160
<i>Hans Van De Greef</i>	
<b>The Commission's Ongoing Ex-post Evaluation of Waste Stream Directives – The Case of the ELV Directive</b> .....	169
<i>Julius Langendorff</i>	

## **SESSION 7: E-MOBILITY**

<b>Recycling Efficiencies for E-Mobility Batteries</b> .....	174
<i>Alain Vassart</i>	

<b>Transport and Recycling of HEV and EV Batteries - Results of German Safety Study</b> .....	189
<i>Nicole Knudsen</i>	

### **TECHNOLOGY SOLUTIONS & EQUIPMENT PROVIDERS I**

<b>Recycling for Automobile Industry – Real Life Examples</b> .....	199
<i>Juttner Walter, E. Hell</i>	
<b>Sensor-based Sorting of Zorba</b> .....	209
<i>Tom Jansen</i>	
<b>“Next Generation of Sensor Sorting Technology - Application in ELV Shredder Plants”</b> .....	215
<i>Karl Hoffmann</i>	
<b>Breakthrough Technology for Recycling Automotive Shredded Residue (ASR) using Eutectic Conditions</b> .....	216
<i>Farouk Tedjar, Jacques Fouletier</i>	

### **TECHNOLOGY SOLUTIONS & EQUIPMENT PROVIDERS II**

<b>The Recovery of Metals from Spent Automobile Catalysts Using DC Plasma Arc Technology</b> .....	219
<i>David Deegan, Tim Johnson</i>	
<b>1993-2013 Celebrating 20 Years of ELV de-Pollution Systems Invented by SEDA</b> .....	227
<i>S. Raubinger</i>	
<b>Eriez Clean Stream Process</b> .....	233
<i>Gareth Bray</i>	
<b>ELV Composite Plastics Developments in PVC &amp; Polyamide's Recycling</b> .....	239
<i>Solvay Thierry Badel</i>	

### **ADDITIONAL PAPERS**

<b>Phasing out Criminal Export</b> .....	243
<i>Sabrina Bolliger, Arie De Jong</i>	
<b>Author Index</b>	