

## 13<sup>th</sup> International Congress for Battery Recycling 17 – 19 September 2008 Düsseldorf, Germany



Patronage: European Battery Recycling Association (EBRA) Rechargeable Battery Recycling Corporation (RBRC)

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### Foreword of ICBR 2008

Batteries are currently being developed at a constantly increasing rate to power a wide range of applications. The most common types, such as the so-called dry cells, are widely used to power a variety of house commodities. However, new markets which involve massive use of exotic batteries are also booming. These include various sectors of the consumer electronics. Popular portable devices, such as lap top computers, cellular phones and Mp3s, now diffused by millions, are powered by lithium batteries. The continuously rising concern on the oil reserves and on the environment conditions, has largely increased the interest in renewable energy sources and in low emission vehicles. Sun does not shine all day long and wind does not blow on command. Thus, storage systems are needed to make an efficient use of these intermittent sources and batteries are ideal in this respect. The hybrid car, which only few years ago was a motor show curiosity, is now an establish product with many hundred thousands unities in the road. The electric engine of this vehicle is presently powered by a nickel-metal hydride battery module which in prospect can be replaced by a lithium-ion battery systems.

The life of all these different types of batteries, regardless whether they are primary or rechargeable, inevitably comes to an end. Since their chemistries may represent an hazard for the human health, the batteries cannot be simply discarded in the urban waste but all require separate collection and a proper recycling. This is not yet an established process. While the recycling of conventional systems, such as leadacid, nickel-cadmium and alkaline batteries is at a satisfactory level, that of the emerging systems, such as nickel-metal hydride and lithium, is still at a preliminary stage. It is expected that these new types of batteries, which are produced at a rate of several billions per year, will soon reach the exhaust state. Nevertheless, it is still unclear which will be their fate.

Although recycling is a growing concern in the European countries, the number of batteries which reach the recycling plants is a minor fraction of those entering the market. At the present the recycling rate is still lower than the target set by the current EU Directive, and this refers only to conventional portable batteries such as primary alkaline-manganese, zinc-carbon, zinc-air and secondary nickel-cadmium.

There is the need of urgent actions to reach higher recycling levels, also in view of the new Directive which calls for a 45% target within the next 10 years. It is then of paramount importance to develop a common policy to achieve collection procedures which prove to be more efficient than the present ones and to design appropriate recycling plans, especially considering new types of batteries, e.g., lithium and nickel-metal hydride that will soon invade the waste stream. This important goal can be reached only by promoting technical and environmental discussions among experts who can jointly define the present and future strategies of the collection policy, such as to identify the most acceptable and profitable compromise between cost and efficiency of recycling the various batteries types.

This Congress is unique in this respect since it is the only internationally recognized event where attendees may benefit by high level technical presentations, as well as by informative debates on the current environmental legislations. Thus, ICBR cannot be missed by anyone involved in the field. Beside the informative and exciting programs, ICBRs are well known for the high standard of the social activities and for the choice of elegant and beautiful sites. This tradition is maintained also for this 2008 edition and I am sure that you will not be disappointed by having decided to be part of this unique event.

Welcome to ICBR 2008, welcome to Düsseldorf, the bustling Rhine metropolis!

#### Professor Bruno Scrosati

Chairman of the Steering Committee International Congress for Battery Recycling

### **Keynote Speakers**





#### Johannes BLOKLAND

Member of the European Parliament Vice-Chairman of the Committee on the Environment, Public Health and Food Safety Netherlands

### "The view of the European Parliament on the Batteries Directive"

### Orsolya CSORBA

European Commission DG Environment Unit Sustainable Production and Consumption Administrator Belgium

# "Current status of the implementation of the Batteries Directive"





### Location of the Congress

The 13<sup>th</sup> International Congress for Battery Recycling (ICBR) will be held in charming Düsseldorf in the **Hotel Intercontinental from 17 – 19 September 2008**.

Intercontinental Hotel \*\*\*\*\* Königsallee 59 40215 Düsseldorf, Germany Phone: +49 211 8285 0 Fax: +49 211 8285 1111 www.intercontinental.com/dusseldorf





### International Steering Committee





Italy Dr Jean-Pol Wiaux, Chairman of the Scientific Committee RECHARGE



**Jan Bartels** STIBAT Managing Director Netherlands

Manaaer

Belgium

Manfred Beck Recycling International Magazine Editor Netherlands



Rechargeable Battery Recycling Corp. (RBRC) Vice President Finance & Administration USA

Jacques David

Managing Director

SCRELEC

France

Greg Broe





**Dr Jürgen Fricke** Foundation GRS Batterien Chairman of the Board Germany



Andreas Krebs Batrec Industrie AG Managing Director Switzerland Representative of EBRA



SAFT Corporate Communication and Investor Relations Director France



**Ernst Locher** Fernwärme Wien Manager Austria

Jill Ledger



Toshio Matsuoka Matsuoka Tech. Consultant Ltd. Consultant Japan



Mark Tomaszewski Inmetco Inc. General Manager Finance and Administration USA



**Johan van Peperzeel** Van Peperzeel B.V. President Netherlands

## Congress Program ICBR 2008

Wednesday, 1	7 <sup>th</sup> September 2008
09.30 - 09.45	"Welcome and Introduction" Prof. Bruno Scrosati, University of Rome, Italy
09.45 – 11.00	KEYNOTE SPEAKERS: Welcome and Opening Speech Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany (invited)
	"The view of the European Parliament on the Batteries Directive" Johannes BLOKLAND, Member of the European Parliament, Netherlands
	"Current status of the implementation of the Batteries Directive" Orsolya CSORBA, European Commission, Belgium
Session 1:	Legislation
	Prof. Bruno Scrosati, University of Rome, Italy
11.00 – 11.30	"A review of critical issues before the implementation date of the New Batteries Directive: The view of the battery industry" <b>Dr Jean-Pol Wiaux, RECHARGE aisbl, Belgium</b>
11.30 - 12.00	"Efficiency of the battery recycling industry: Technical challenges for a better environment" Bertrand Schutz & Dr Alain Vassart, European Battery Recycling Association
12.00 – 13.30	Lunch
Session 2: Session Chairman:	Battery Collection Andreas Krebs, Batrec Industrie AG, Switzerland
13.30 - 14.00	"Prepared for the future: GRS Batterien – the common collection system in Germany" Dr Jürgen Fricke & Nicole Knudsen, Foundation GRS Batterien, Germany
14.00 - 14.30	"Management of used batteries and accumulators in Portugal" Ana Cristina Caldeira, Portuguese Environment Agency, Portugal
14.30 - 15.00	"Regulation on used batteries in Turkey" Halime Sezer, Ministry of the Environment and Forestry, Turkey
15.00 - 15.30	"Poland: A very special case for the transposition of the Batteries Directive" Michal Korkozowicz, REBA Recovery Organization S.A., Poland
15.30 - 16.00	Coffee break
Session 3:	Harmonization of Registration and Reporting
Session Chairman:	Dr Jürgen Fricke, Foundation GRS Batterien, Germany
16.00 – 16.30	"Join the weight watchers" Jan Bartels, STIBAT, Netherlands Pascal Van der Auwera, BEBAT, Belgium
16.30 - 17.00	"The need for a harmonized EU registration system" Hans Craen, EPBA, Belgium
17.00 - 17.30	"Joint registration to the WEEE and to the Batteries Directive" Colin Thirlaway, The Black & Decker Corporation, United Kingdom
19.30	Networking dinner

### Thursday, 18<sup>th</sup> September 2008

Session 4:	WEEE & Batteries	
	: Dr Jean-Pol Wiaux, RECHARGE aisbl, Belgium	
09.00 - 09.30	"Battery sorting and battery separation from WEEE" Johan van Peperzeel, Van Peperzeel B.V., Netherlands	
9.30 – 10.00 "The challenge for raising the spent batteries collection rate Jacques David, SCRELEC, France		
10.00 – 10.30	"UK portable battery research – Brand analysis, metals content & puk awareness of batteries" Michael Green, G&P Batteries Ltd., United Kingdom	
10.30 – 11.00	Coffee break	
11.00 - 11.30	"Joint WEEE and battery collection schemes" Andreas Kröniger, CCR Logistics Systems AG, Germany	
11.30 – 12.00	"Prospects for automatic sorting lines for spent batteries by X-Ray transmission"	
	Dirk Martens-Bimberg, TiTech GmbH, Germany	
12.00 – 12.30 "Battery Product Stewardship: The Australian experience" Liz Richmond, Sustainability Victoria, Australia		
12.30 – 14.00	Lunch	
Session 5: Session Chairman:	Recycling Plants & Processes I Greg Broe, RBRC, USA	
14.00 - 14.30	"New chemistries in lithium batteries" Prof. Bruno Scrosati, University of Rome, Italy	
14.30 - 15.00	"Extension of the Recupyl process: From portable batteries to HEV & EV batteries" <b>Prof. Farouk Tedjar, Recupyl SA, France</b>	
15.00 - 15.30	"Recycling Li-ion batteries at Xstrata Nickel" Patrick Henrion, Xstrata Nickel, Belgium	
15.30 – 16.00	Coffee break	
Session 6: Session Chairman	<u>Recycling Plants &amp; Processes II</u> : Mark Tomaszewski. Inmetco Inc., USA	
16.00 – 16.30	"Recycling or direct metal production? A comprehensive life cycle analysis from metals to batteries" Clémence Siret, SAFT, France	
16.30 - 17.00	"The cyclic production of secondary batteries" Prof. Lixu Lei, Southeast University, China	
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17.00 - 17.30	Dr Steven E. Sloop, OnTo Technology LLC, USA	
17.00 – 17.30 17.30 – 18.00	Dr Steven E. Sloop, OnTo Technology LLC, USA "REACH and its major impact on recycling companies" Dr Beate Kummer, Kummer: Umweltkommunikation, Germany	
	"REACH and its major impact on recycling companies"	

#### Friday, 19<sup>th</sup> September 2008

Plant tours leaving from the Hotel Intercontinental

#### DK Recycling und Roheisen GmbH, Duisburg

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09.00	Departure by bus to DK Recycling und Roheisen GmbH	Recy
10.00	Arrival at DK Recycling und Roheisen GmbH	und
10.00 - 12.00	Plant tour of the battery recycling plant	Rob
13.00*	Arrival at the airport of Düsseldorf	
13.30	Arrival at the Hotel Intercontinental	

DK Recycling und Roheisen GmbH was founded in 1876 to recycle metal containing residues arising in industrial processes. Today it is focused on processing iron containing dusts and sludges from the European steel industry into high quality pig iron for the foundry industry. The company does this in a sinter plant and a blast furnace.

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With about 270 employees the company produces approximately 280 000 t of pig iron from about 400 000 t of secondary raw materials. Apart from steel mill residues DK offers its highly sophisticated services for the recycling of other iron containing dusts/sludges and especially batteries.

More information at: www.dk-duisburg.de

#### Umicore, Olen (Belgium)

08.00	Departure by bus to Umicore
10.30	Arrival at Umicore
10.30 - 13.00	Plant tour of the battery recycling plant
16.30*	Arrival at the airport of Düsseldorf
17.00	Arrival at the Hotel Intercontinental

Umicore is a materials-technology group focusing on "clean" technologies: our platform of products and innovations help turn our society into a sustainable one. With more than 50 industrial locations and offices worldwide and more than 14 000 employees Umicore can really offer efficient support to its customers all over the planet. Umicore produces a multitude of products derived from more than 20 different metals and is also a world class leading manufacturer of active cathode materials for Li-Ion, Li-Polymer and NiMH batteries. Umicore offers an eco-sound recycling service for all aforementioned End-of-Life rechargeable batteries of all sizes.

The visit of the Umicore plant in Olen, world's no. 1 plant for cobalt specialty materials, will offer you an insight of the Val'Eas process, an award winning technology. You will

have a video presentation of the Pyrometallurgical process combined with a Plasma Technology operated in Hofors Sweden as well as the on-site visit of the subsequent Hydrometallurgical process in Olen which allows to turn end-of-life rechargeable Li-lon, Li-Polymer and NiMH batteries and battery production process scrap back to new high purity active cathode materials for the production of the same batteries. A unique Closed Loop.

More information at: www.batteryrecycling.umicore.com

#### Van Peperzeel, Lelystad (Netherlands)

08.00	Departure by bus to Van Peperzeel
11.00	Arrival at Van Peperzeel
11.00 - 13.30	Plant tour of the battery sorting plant
17.30*	Arrival at the airport of Düsseldorf
18.00	Arrival at the Hotel Intercontinental



The family owned company Van Peperzeel was founded in 1978. Only six people were employed in 1993 and today with the new premises in Lelystad the number of employees has grown into about forty employees, inclusive charter drivers. Van Peperzeel is the national sorting centre of waste consumer batteries. Furthermore,

it collects old lead acid batteries and makes them ready for recycling.

Not only does Van Peperzeel work for Stibat (the Battery Foundation), it also works for nationally operating wholesalers in the automotive industry. The annual collecting amounts to 27 500 t of old lead acid batteries and 5 000 t of non ferrous metals and non ferrous residues. (You can think of old license plates, rims, car spent catalytic converters and a variety of industrial waste as skimmings and turnings).

More and more products run on consumer batteries nowadays. From keyboards to children's toys. Daily, hundreds of different brands and types of consumer batteries throughout the world reach our country and are thrown away, turned in or disposed by producers in course of time. Luckily, all consumer batteries are recyclable nowadays which makes recycling possible.

The foundation 'Consumer Batteries' (Stibat) has been founded to help producers and importers carry out their obligation to collect and process used consumer batteries. Van Peperzeel takes care of Stibat's collecting, sorting and processing of all consumer batteries throughout the Netherlands. Annually, more than 3 000 t of consumer batteries are sorted with the help of specially designed machines. This means over 500 000 batteries each day are sorted.

#### More information at: www.peperzeel.nl

<sup>\*</sup> No guarantee on arrival time due to traffice conditions.

### Who should attend?

#### • Battery producers

- Recycling companies
- Waste management companies
- Battery collection companies
- Associations in the field of battery waste management
- Financing organization for battery recycling
- Environmental authorities
- Laboratories for material science
- Universities and research institutes
- Consultants

### Organizer of the ICBR

#### ICM AG

International Congress & Marketing Schwaderhof 524 5708 Birrwil, Switzerland

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Jeanette Duttlinger Congress Organizer



Susann Schmid Congress Assistant



Claudia Gerstendörfer Congress Assistant







### **Charming Düsseldorf**

Art, business and Rhenish lifestile – Düsseldorf is the bustling Rhine metropolis right in the heart of Europe and has a lot to offer:

Almost everyone has heard about it, the legendary Old Town of Düsseldorf. Its alleys, squares and the Rhine promenade with its many cafés and beer gardens transform into one large open-air terrace, especially in the summer. But the Old Town is more than just a pleasure spot: numerous churches, historical buildings and many museums all make a visit worthwhile!

The MedienHafen or Media Harbour is a successful example of modern city development and impresses with the imaginative architecture. The Rheinturm with its breathtaking view of the city is an ideal starting point for a trip around the harbour. Don't miss the chance and explore the variety of Düsseldorf!

#### www.duesseldorf.de





Ying Liu

Congress Assistant

**Yvonne Steiner** 

### **Hotel Accommodation**

For the participants of the congress a number of rooms are held until July 25, 2008 at a special rate at the below-mentioned hotels. Reservation after this date will be subject to space and rate availability. If you wish, you may also extend your stay at the same rate.



Intercontinental Hotel \*\*\*\*\* Königsallee 59 40215 Düsseldorf Germany Phone: +49 211 8285 0 Fax: +49 211 8285 1111 www.intercontinental.com/dusseldorf

(congress place)



#### Hotel Nikko Düsseldorf \*\*\*\*

Immermannstraße 41 40210 Düsseldorf Germany Phone: +49 211 834 0 Fax: +49 211 161216 www.nikko-hotel.de

(10 min. walk from the congress place)



#### InterCityHotel Düsseldorf \*\*\*

Graf-Adolf-Straße 81-87 40210 Düsseldorf Germany Phone: +49 211 43694 0 Fax: +49 211 43694 499 www.duesseldorf.intercityhotel.de

(10 min. walk from the congress place)

### **Registration Fees**

Registration for the congress should be made by means of the registration form. Participants registering and paying **before July 25**, **2008** will benefit from a reduced registration fee. The registration fee includes congress, entrance to the exhibition, proceedings and luncheons.

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Congress Fee	before July 25, 2008	after July 25, 2008
Fee for participants Fee for speakers Fee for students Networking dinner (Sept. 17, 2008)	€ 1'290 € 690 € 490 € 90	€ 1'390 € 790 € 590 € 100
Plant tours (Sept. 19, 2008): – DK-Recycling, Duisburg – Umicore, Olen (Belgium) – Van Peperzeel, Lelystad (Netherlands)	€ 30 € 30 € 30	€ 50 € 50 € 50
Accompanying Person (spouse) Networking dinner (Sept. 17, 2008)	€ 100	€ 110

All prices excl. 19% German VAT

Registration on site € 100.– surcharge

#### Additional Proceedings

If it is not possible for you to attend the congress, you may purchase the complete proceedings at EUR 350.–. Participants will get the proceedings free of charge.

#### Payment

Payment should be made in EUR by bank transfer or by credit card. Wire payment to:

Bank:Neue Aargauer Bank, 5400 Baden, SwitzerlandBeneficiary:ICM AGAccount number:447941-72IBAN:CH41 0588 1044 7941 7200 0Clearing number:5881Swift code:AHHBCH22XXX

### **Networking Dinner**



On Wednesday, September 17, a special networking dinner will be organized in charming Düsseldorf.

Do not miss this perfect possibility to meet your business partners and register to this evening now!







### Exhibition and Poster Presentations

A special exhibition will be organized for companies wishing to display their products or advertising materials.

The fee for an exhibition stand (2 m x 3 m) is EUR 2'500.– for the full time of the conference.







Space is limited, so take the chance and book your exhibition stand today!

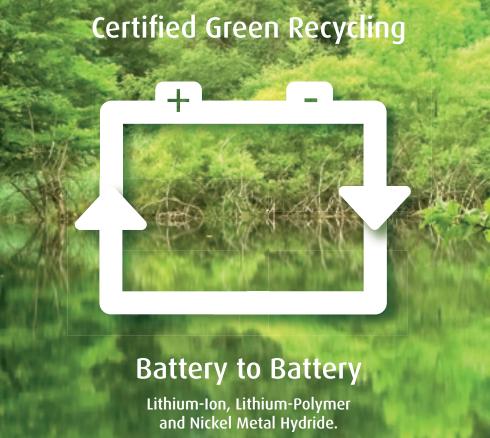








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Thank you for conserving valuable natural resources and contributing to the preservation of our environment.

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# ELECTRONICS & BATTERY RECYCLING '09

International Conference, Exhibition & Plant Tours June 24–26, 2009, Toronto, Canada

