

# ICBR 2015

## 20th International Congress for Battery Recycling ICBR 2015

September 23 – 25, 2015, Montreux, Switzerland



### Patronage:

Association of European Automotive and Industrial Battery Manufacturers (EUROBAT)


Call2Recycle, Inc.

EUCOBAT

European Battery Recycling Association (EBRA)

The European Association for Advanced Rechargeable Batteries (RECHARGE)

The Rechargeable Battery Association (PRBA)

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## FOREWORD



### PROFESSOR BRUNO SCROSATI

Chairman of  
the Steering Committee  
International Congress for  
Battery Recycling

This is a special edition of ICBRs since it celebrates its 20<sup>th</sup> anniversary. Many changes occurred in battery technology since 1995. However, they have been constantly monitored and considered in all the subsequent ICBR editions by careful and comprehensive analyses of batteries progressively emerging in the market, both in terms of their chemical composition and of the legislation in force worldwide to assure their proper disposal and recycling. This unique performance accounts for the continuously increasing success of this congress, presently rated as a top event, which cannot be missed by anyone involved in the important field of battery recycling. Indeed, the number of participants of ICBRs increased constantly and tremendously from 80 in 1995 to the 200 expected for this 2015 edition.

This year's event will start with three key presentations, two

of them aimed to inform us on the environmental policies in Switzerland and the other on the battery market evolution. We will then learn in the following session 2 about the impact of the legislation in force in the US and in the European community on the related battery industries.

The afternoon will then continue with session 3 devoted to the battery collection schemes in progress in various countries, including UK, Switzerland, Japan and finally close with session 4, where we will be informed on the EU Battery Directive and on its expected revisions. An important innovation of this year's program is the absence of parallel sessions, an action aimed to avoid audience dispersion such as to provide all the participants full attendance to the technical sessions. The day will be concluded by the splendid social gatherings that characterize ICBRs,

including a cocktail reception followed by the Networking Dinner, events where superb food and drinks will be served, to establish a very pleasant and relaxed atmosphere for meeting colleagues and establishing business contacts.

In the first session 5 of the morning of the second day we will hear by key speakers from Germany and UK how to address the critical issue of removing and separating batteries from WEEE. We will then continue with session 6, where the most common materials used in batteries, including lithium ion batteries, will be reviewed with particular attention to their impact on the environment if not properly treated and disposed of. The following session 7 will deal with the optimization of the recycling processes, with particular attention on large industrial batteries and on the hazardous lithium batteries. As all the sessions of this

congress which are of great, unique relevance and also this one meets the standard since it provides guidelines on how to handling special batteries, i.e., an information rarely found in other conferences in this field.

The new technologies, addressed to the recycling of standard alkaline and emerging chemistries, will be presented and discussed in the last session 8 of the day. We will then gather for a relaxing farewell cocktail. During the congress you may also profit from myStromer AGs e-bike test drives. Finally, the ICBRs tradition of offering plant tours to the participants is also kept this time with a plant tour to Batrec Industrie AG. As an alternative, we also offer a dedicated workshop on the current and future regulations for the transport of lithium batteries with particular focus on safety, namely a topic of time-liness importance considering the

continuous expansion of the related market (several billions of units per year) and the associated worldwide shipping of these popular power sources.

To put it simply, another great meeting with a selected technical program that will certainly stimulate interest and lively discussions among the participants! On behalf of the Steering Committee I would like to express our thanks to all the experts who have accepted the invitation to come to this congress and deliver their talks, so as to contribute with their presentations to its success. Such an outstanding program could not be ensured without the tireless dedication of the ICM staff who have worked very hard to make this congress another ICBR unforgettable experience and to whom all goes our deep gratitude.

Welcome to ICBR 2015, welcome to charming Montreux.

## KEYNOTE SPEAKERS



**DR MICHEL MONTEIL**

Federal Office for the Environment  
Management of Waste and Resources  
Head of Division  
Switzerland

“Environmental Policies in Switzerland”

**CHRISTOPHE PILLOT**

AVICENNE ENERGY  
Director  
France

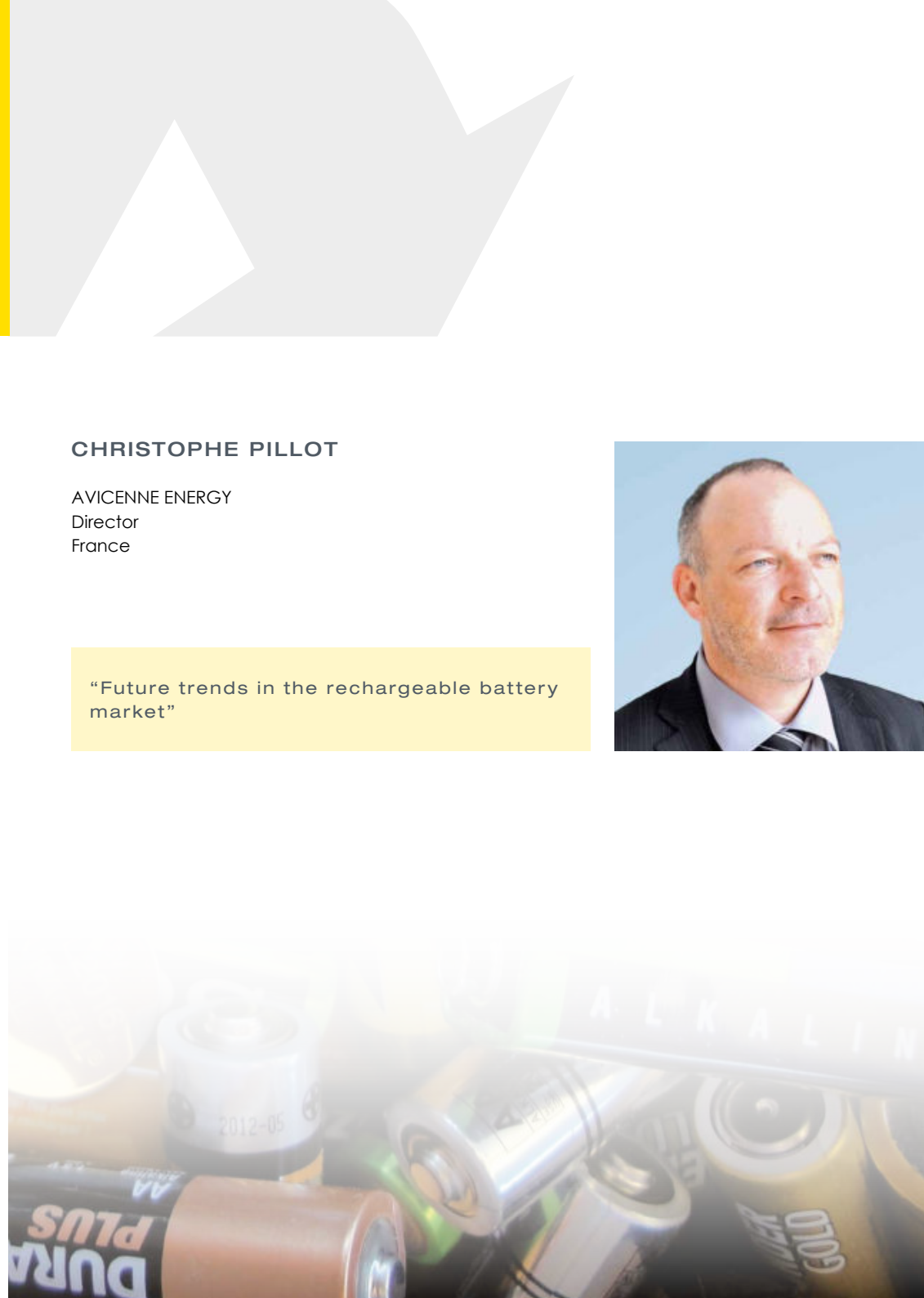
“Future trends in the rechargeable battery market”



**DR KATHARINA KUMMER PEIRY**

Kummer EcoConsult  
Director  
Switzerland

“Future challenges for the Basel Convention”



## INTERNATIONAL STEERING COMMITTEE



**PROFESSOR BRUNO SCROSATI**  
Chairman  
Elettrochimica ed Energia (E&E)  
President  
Italy



**JACQUES DAVID**  
Consultant  
France



**DR DIETER OFFENTHALER**  
Batrec Industrie AG  
Managing Director  
Switzerland



**DR ALAIN VASSART**  
EBRA  
General Secretary  
Belgium



**DR JEAN-POL WIAUX**  
Chairman of the Lecture Group  
RECHARGE  
Director General  
Belgium



**MICHAEL GREEN**  
Independent Waste Battery  
Consultant  
United Kingdom



**CARL E. SMITH**  
Call2Recycle, Inc.  
CEO/President  
USA



**JAN BARTELS**  
STIBAT  
Managing Director  
Netherlands



**JILL LEDGER**  
SAFT  
Corporate Communication  
and Investor Relations  
Director  
France



**MARK R. TOMASZEWSKI**  
INMETCO  
President  
USA



**GEORGIOS CHRYSOS**  
Stiftung GRS Batterien  
Managing Director  
Germany



**SHINYA NAKAJIMA**  
Japan Portable Rechargeable  
Battery Recycling Center  
General Manager  
Japan



**JOHAN VAN PEPERZEEL**  
Van Peperzeel B.V.  
Managing Director  
Netherlands

## LOCATION & ACCOMMODATION

For the participants of the congress a number of rooms are held at a discounted rate if you register **before August 31, 2015**. If you wish, you may also extend your stay at this lovely hotel at the same rate.



The 20<sup>th</sup> International Congress for Battery Recycling ICBR 2015 will be held from **September 23 – 25, 2015** in the Hotel Fairmont Le Montreux Palace. Fairmont Le Montreux Palace resort hotel is situated on the shores of Lake Geneva in Switzerland, overlooking the Alps. Built in 1906, this Jewel of Belle-Époque architecture offers a traditional and elegant atmosphere, personalized and attentive service in true Swiss style.



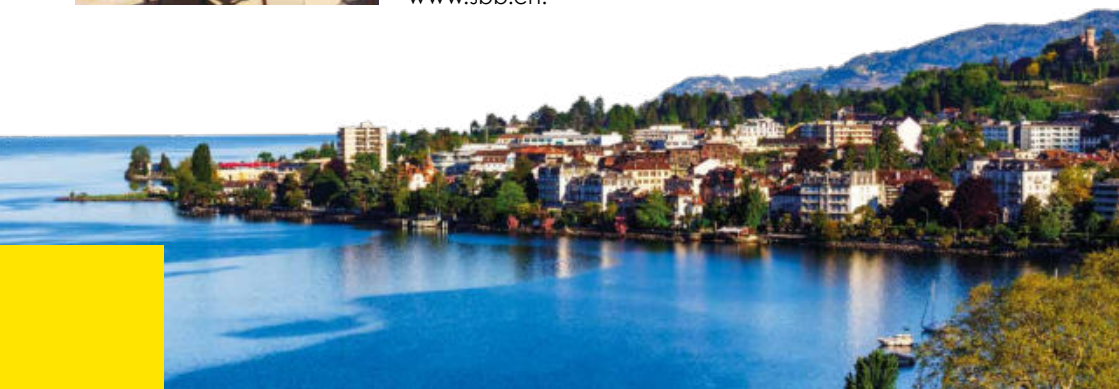
### Hotel Fairmont Le Montreux Palace\*\*\*\*\*

Avenue Claude Nobs 2  
1820 Montreux, Switzerland  
Phone + 41 219 62 12 12  
Fax + 41 219 62 17 17  
[www.fairmont.com/montreux](http://www.fairmont.com/montreux)



### How to reach Montreux

The closest international airport to Montreux is Geneva International Airport. From Geneva airport the journey to the Hotel Fairmont Le Montreux Palace is around 1 hour by train or by car. Switzerland has excellent public transport connections. Timetables and fares can be found on the SBB website: [www.sbb.ch](http://www.sbb.ch).



## BEAUTIFUL MONTREUX

A unique region, with all kinds of charm, attached to its root, but open to the world, Montreux Riviera has been attracting many visitors for over 200 years. It is not surprising that some famous personalities, including Charlie Chaplin, Freddie Mercury and Igor Stravinski, developed particularly close and lasting relationships with this unusual area.

If Montreux is a benchmark for the luxury hotel industry, business tourism, top-class gastronomy and wines, education and health clinics, its natural beauty is no less impressive. In this regard, the Lavaux terraced vineyards, part of the UNESCO World Heritage, no doubt represent one of the region's most enchanting places. As for activities, the Montreux Jazz Festival, Christmas Market

and Comedy Festival are the most well-known, but they are strongly supported by a variety of theatre performances and concerts, which complete a top-class range of cultural attractions.

Enthroned on an islet, on the shore of Lake Geneva, the most famous castle in the region is unquestionably Chillon Castle. Built in the 12<sup>th</sup> century by the Counts of Savoy, this dual-aspect Medieval castle is one of the finest monuments in Switzerland and one of the most visited in Europe.

Sunshine, sumptuous scenery, something to do for all tastes Montreux Riviera – pure inspiration.



[www.montreuxriviera.com](http://www.montreuxriviera.com)

**TUESDAY, SEPTEMBER 22, 2015**  
**17.00-19.00 PRE-REGISTRATION**

## CONGRESS PROGRAM ICBR 2015



### TUESDAY, SEPTEMBER 22, 2015

17.00 – 19.00 Pre-Registration

### WEDNESDAY, SEPTEMBER 23, 2015

08.00 – 09.15 Registration and welcome coffee in the exhibition area

#### Session 1: OPENING AND KEYNOTE SPEAKERS

- 09.15 – 11.00 "Welcome and introduction"  
**Prof. Bruno Scrosati, Chairman of the Steering Committee**
- "Environmental Policies in Switzerland"  
**Dr Michel Monteil, Federal Office for the Environment, Management of Waste and Resources, Switzerland**
- "Future challenges for the Basel Convention"  
**Dr Katharina Kummer Peiry, Kummer EcoConsult, Switzerland**
- "Future trends in the rechargeable battery market"  
**Christophe Pillot, AVICENNE ENERGY, France**

11.00 – 11.30 Coffee break in the exhibition area

#### Session 2: Impact of the legislation on the battery industry Session Chairman: **Jill Ledger, SAFT, France**

- 11.30 – 12.00 "A closer look at battery recycling legislation in North America"  
**Carl Smith, Call2Recycle, Inc., USA**
- 12.00 – 12.30 "Impact of the EU legislation on the EU Battery Industry"  
**Patrick de Metz, SAFT, France**

12.30 – 14.00 Lunch in the exhibition area

#### Session 3: Collection schemes Session Chairman: **Johan Van Peperzeel, Van Peperzeel B.V., Netherlands**

- 14.00 – 14.30 "BatteryBack – In the lead in UK Battery Compliance"  
**David Reynolds, BatteryBack, United Kingdom**
- 14.30 – 15.00 "INOBAT – Organisation – Collection results – Advertising and public relations"  
**Johannes Märki, INOBAT, Switzerland**
- 15.00 – 15.30 "Issues and activities on collection and recycling of rechargeable batteries in Japan"  
**Shinya Nakajima, Japan Portable Rechargeable Battery Recycling Center (JBRC), Japan**

15.30 – 16.00 Coffee break in the exhibition area

#### Session 4: Revision of the Batteries Directive Session Chairman: **Georgios Chryssos, Stiftung GRS Batterien, Germany**

- 16.00 – 16.30 "Electrified vehicle batteries: Future implications for collection and recycling"  
**Peter Coonen, BEBAT, Belgium**
- 16.30 – 17.00 "Batteries Directive 2006/66/EC issues for review & other challenges for the advanced battery industry"  
**Willy Tomboy, RECHARGE, Belgium**
- 17.00 – 17.30 "EBRA topics for the revision of the Battery Directive"  
**Dr Alain Vassart, EBRA, Belgium**

19.30 Cocktail reception in the exhibition area

20.00 Networking dinner

# CONGRESS PROGRAM ICBR 2015



## THURSDAY, SEPTEMBER 24, 2015

**08.00 – 09.00** Welcome coffee in the exhibition area

**Session 5:** Batteries and WEEE

**Session Chairman:** **Dr Jean-Pol Wiaux, RECHARGE, Belgium**

09.00 – 09.30 "Separation of batteries from WEEE"  
**Knut Sander, Ökopol, Germany**

09.30 – 10.00 "Policy impacts on battery recycling"  
**Jonathan Perry, Dell Corporation Ltd., United Kingdom**

10.00 – 10.30 "Joined collection and communication for WEEE and waste batteries"  
**Tobias Schulze Wettendorf, Stiftung GRS Batterien, Germany**

**10.30 – 11.00** Coffee break in the exhibition area

**Session 6:** Materials used in batteries

**Session Chairman:** **Dr Dieter Offenthaler, Batrec Industrie AG, Switzerland**

11.00 – 11.30 "Innovative energy storage systems of Germany's Energiewende – Supply risks and environmental challenges"  
**Dr Hartmut Stahl, Öko-Institut e.V., Germany**

11.30 – 12.00 "Classification and labelling under GHS and Waste Regulations"  
**Dr Beate Kummer, Kummer:Umweltkommunikation GmbH, Germany**

12.00 – 12.30 "Lithium materials in batteries"  
**Martin Steinbild, Albemarle, Germany**

**12.30 – 14.00** Lunch in the exhibition area

**Session 7:** Recycling processes optimization

**Session Chairman:** **Dr Alain Vassart, EBRA, Belgium**

14.00 – 14.30 "Sort and recycling smart. The next generation from household batteries to industrial batteries. The next steps."  
**Holger Kuhlmann, Redux Recycling GmbH, Germany**

14.30 – 15.00 "New trends in recycling of Lithium Ion batteries"  
**Dr Sascha Nowak, University of Muenster, MEET Battery Research Center, Germany**

15.00 – 15.30 "Gaseous emissions from rechargeable Lithium based batteries and related concerns under abuse conditions across their life cycle"  
**Guy Marlair, INERIS, France**

**15.30 – 16.00** Coffee break in the exhibition area

**Session 8:** Trends in new recycling technologies

**Session Chairman:** **Carl Smith, Call2Recycle, Inc., USA**

16.00 – 16.30 "Concentration of cathode materials by combining roasting, selective crushing and physical separation processes from spent Lithium Ion batteries of small electronic appliances"  
**Dr Gangfeng Liu and Prof. Shuji Owada, Waseda University, Japan**

16.30 – 17.00 "A new industrial plant for alkaline battery recycling"  
**Stéphane Chorlet, VALDI – ERAMET, France**

17.00 **Closing remarks from Prof. Bruno Scrosati, Chairman of the Steering Committee**

**From 17.10** Farewell cocktail in the exhibition area

# WORKSHOP

+ STROMER -  
+ 

## Lithium batteries transport & safety issues

**Moderated by** Jean-Pol Wiaux, RECHARGE, Belgium

**Date** Friday, September 25, 2015

**Time** 09.00 – 12.00

**Location** Hotel Fairmont Le Montreux Palace

**Price** EUR 50.00 (incl. coffee break)

**Speakers**

- Dr Claude Chanson, RECHARGE, Belgium
- Sebastian Kross, Stiftung GRS Batterien, Germany
- Dr Beate Kummer, Kummer:Umweltkommunikation GmbH, Germany
- Shinya Nakajima, Japan Portable Rechargeable Battery Recycling Center, Japan
- Dr Marco Ottaviani, ANIE-CSI, Italy
- Johan Van Peperzeel, Van Peperzeel B.V., Netherlands

As from January 2015, industry has to transport waste Lithium batteries (for disposal or recycling) in accordance with the new provisions of ADR 2015 and particularly with SP377 and the associated Packing Instruction P909. Damaged and defective Lithium batteries have also to be transported according to SP376 and P908 of the UN Model Regulations. These new requirements are aiming at increasing the safety during transport of these Lithium batteries.

There is a need for better communication of the requirements of ADR regarding the transport conditions (packaging, labelling,...) of waste Lithium batteries in general and damaged and defective batteries particularly.

The objective of the workshop is to update the audience about the recent changes in the ADR Regulation and to exchange the return of field experiences from industry in order to recommend good practice guidances for the safe transport of these batteries.

### Preliminary agenda

1. Introduction
2. Review of the updates in ADR 2015 Regulation
3. Implementation of SP376 and P908 on damaged and defective Lithium batteries
4. Implementation of SP377 and P909 on Lithium batteries for disposal or recycling
5. Safety related issues
6. Conclusions & Follow-up



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# Pioneers in Battery recycling. And so much more.

## PLANT TOUR ICBR 2015

FRIDAY, SEPTEMBER 25, 2015

### BATREC INDUSTRIE AG, WIMMIS



08.15	Pick-up by bus in front of the Hotel Fairmont Le Montreux Palace
08.40	Departure by the "goldenpass classic train" to Batrec Industrie AG
11.30	Arrival at Batrec Industrie AG
11.30 – 14.30	<b>Visit of the battery recycling plant</b>
16.30*	Arrival at the Hotel Fairmont Le Montreux Palace
18.00*	Arrival at the Geneva airport

**BATREC Industrie AG** is a globally active recycling company, located in Wimmis (Switzerland), that is specialised in the economical, environmentally-friendly and sustainable disposal and recycling of hazardous waste. The main activities are the recycling of batteries, the recycling of all kind of Hg-wastes and the reactivation of activated carbon.

With a history of more than 20 years in battery recycling, BATREC is one of the most experienced and traditional battery recycling facilities. The applied recycling technology consisting of a pyrolysis, followed by a smelt-reduction in an electric arc furnace and a zinc-splash condenser is unique and allows a full metal recovery in one step. The plant has a capacity of 5.000 t and is able to recycle all types of batteries except from NiCd and lead acid batteries. Following major investments into mercury recycling technology and offering a variety of technological treatment options, BATREC is nowadays one of the leading mercury recyclers in the world with a treatment capacity of 4.000 t. Although all kind of mercury wastes are accepted, BATREC is specialized on industrial mercury wastes from the oil & gas industry as well as the Cl-alkaline industry.

[www.batrec.ch](http://www.batrec.ch)



Batrec is a recycling company based in Wimmis/Switzerland.

We offer high quality solutions for:

- Battery recycling • Recycling of spent mercury guards
- Recycling of mercury wastes • Reactivation of activated carbon

Learn more about us:

[www.batrec.ch](http://www.batrec.ch)



SARPI  VEOLIA

\* No guarantee on arrival due to traffic conditions.

## EXHIBITION AND POSTER PRESENTATION



The exhibition area provides your company with the perfect opportunity to reach key industry decision makers. Promote your products to all congress attendees.

The fee for an exhibition booth (2 m x 3 m) is EUR 3'500.- and for a poster presentation EUR 350.- for the full time of the congress.

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



## EXHIBITORS

As per May 28, 2015:



DOLAV Germany GmbH, Germany



Glencore AG, Switzerland



Greenoffice, Switzerland



Metal Depot Zurich AG, Switzerland



myStromer AG, Switzerland



Umicore Battery Recycling, Belgium



## NETWORKING DINNER



Meet friends and business partners in a nice atmosphere!




Join us on Wednesday, September 23, 2015 at a marvelous networking dinner in the wonderful ballroom of the Hotel Fairmont Le Montreux Palace.

Do not miss this perfect opportunity to socialize with your business partners and register for this evening!



## SPONSORS

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## ORGANIZER

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Congress & Marketing  
Schwaderhof 7  
5708 Birrwil, Switzerland  
  
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info@icm.ch  
www.icm.ch



Registration for the congress should be made by means of the registration form or online. Participants registering and paying **before July 31, 2015** will benefit from a reduced registration fee. The registration fee includes congress, entrance to the exhibition, proceedings and luncheons.

## REGISTRATION FEES



**JEANETTE DUTTLINGER**  
Congress Organizer



**MELANIE LEIBUNDGUT**  
Congress Assistant



**MIRJAM WAGNER**  
Congress Assistant



**YING LIU REICHENBACH**  
Congress Assistant



**SABRINA BOLLIGER**  
Congress Assistant



**SANDRA MANNHART**  
Congress Assistant



**SUSANN SCHMID**  
Congress Assistant



**AURI TEINILÄ**  
Congress Assistant



**SIBYLLE WIEDERKEHR-ZIMMERLI**  
Congress Assistant

	before July 31, 2015	after July 31, 2015
<b>Congress Fee</b>		
Fee for participants	EUR 1'490.-	EUR 1'590.-
Fee for speakers	EUR 890.-	EUR 990.-
Fee for students	EUR 590.-	EUR 690.-

Networking dinner (Sept. 23)	EUR 100.-	EUR 120.-
Networking dinner for spouse (Sept. 23)	EUR 120.-	EUR 140.-

<b>Plant tour</b> (Friday, Sept. 25) Batrec Industrie AG	EUR 90.-	EUR 120.-
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<b>Workshop</b> (Friday, Sept. 25) Lithium batteries transport & safety issues	EUR 50.-	EUR 70.-
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**Online registration**  
You may also register online at: [www.icm.ch/icbr-2015](http://www.icm.ch/icbr-2015)

Registration on site EUR 100.- surcharge

**Additional Proceedings**  
If you cannot 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:

Beneficiary: ICM AG  
Bank: Neue Aargauer Bank, 5400 Baden, Switzerland  
IBAN: CH41 0588 1044 7941 7200 0  
Swift code: AHHBCH22XXX  
Currency: EUR

### Upcoming ICM Events:

## WHO SHOULD ATTEND?



- Battery producers
- Recycling companies
- Waste management companies
- Battery collection schemes
- Battery collection and transportation companies
- Non ferrous metal traders
- Non ferrous metal industry
- Associations in the field of battery waste management
- Financing organization for battery recycling
- Environmental authorities
- Laboratories for material science
- Universities and research institutes
- Consultants



### Electronics Recycling Asia WRF 2015

WRF 2015



November 10 – 13, 2015  
Singapore



### 15th International Electronics Recycling Congress IERC 2016

IERC 2016



January 20 – 22, 2016  
Salzburg, Austria



### 16th International Automobile Recycling Congress IARC 2016

IARC 2016



March 16 – 18, 2016  
Berlin, Germany





# Battery Recycling now. For a better world tomorrow.



Acceptance of all types of batteries.  
Highly efficient recycling.

Velocity of sorting: 30 batteries per second

**REDUX**  
Recycling GmbH



You and us:

## **Collection and recycling for portable and industrial batteries**

GRS Batterien guarantees you professional collecting, sorting and recycling of spent batteries. Many years of experience in the handling of portable batteries has made it possible to implement the first nationwide collection system for industrial batteries, in particular industrial lithium accumulators from e-bikes.

We offer individual solutions for eco-friendly recycling to all producers and distributors in Germany.

[www.grs-batterien.de](http://www.grs-batterien.de)