



# 11<sup>th</sup> International Congress for Battery Recycling

June 28 – 30, 2006  
Interlaken, Switzerland



Patronage:  
 Federal Office for the Environment FOEN  
 European Battery Recycling Association  
 European Portable Battery Association

Sponsored by:



## Foreword of ICBR 2006

Batteries are acquiring a key role for the energy renewal and environmental control. It is now clear that, at the present rate of consumption, the oil reserves will soon reach a critical limit with a dramatic consequence in term of cost and energy policy. Thus, new directions in our energy production should soon be searched and, obviously, the choice of renewable source is the most appealing. However, winds do not blow on command and sun does not shine over 24 hours. Convenient means of energy storage are requested and batteries are the most appropriate systems to fulfil this requirement.

In addition, the use of oil as energy source also reflects in a severe social and environmental concern. Oil combustion involves emissions which are dangerous for the human health and which may induce serious risks for the world climate balance. In view of this, there is the urgent need to replace a large fraction of the internal combustion engine cars with zero or controlled emission cars, e.g. electric vehicle, EV and hybrid vehicle, HEV. Indeed, HEVs are already reaching a large market in the automobile sectors with many thousand of cars already on the road.

Another market in continuous expansion is that involved with consumer electronics. Popular portable devices, such as lap top computers and, particularly, cellular phones, are now largely diffused with the introduction in the market of systems with a continuously increasing sophistication. All these batteries, conventional or advanced, contain materials which are of concern having a certain degree of toxicity which varies passing from one system to the other. Among the conventional systems, the alkaline and zinc car-

bon batteries are now classified as not hazardous in the EU directive; however, there are still various others, e.g. lead-acid and nickel-cadmium batteries, which are based on chemistries which are dangerous for the human health. In the new systems, e.g., Ni-MH and the lithium-ion batteries, require a proper attention when they reach their final state and have to be disposed.

Therefore, it is clear that these batteries cannot be simply discarded in the urban waste but that they rather require separate collection and a proper recycling. Thus, it is of paramount importance to favour a joint discussion among experts to define present and future strategies of the collection policy, with the final goal of identifying the most acceptable compromise between the cost and the efficiency of recycling of the various battery types.

This congress provides an unique opportunity in this respect: ICBR is the only internationally recognized event in battery recycling and thus, it should not be missed by anyone involved in the field. Beside their informative and exciting program, ICBRs are well known for their high standard of the social activities and for the choice of elegant and beautiful sites. This tradition is maintained also for this 2006 edition and I am sure that you will not be disappointed by the beautiful Interlaken.

Welcome to ICBR 2006, welcome to green Switzerland!

### **Professor Bruno Scrosati**

Chairman of the Steering Committee  
International Congress for Battery Recycling

## International Steering Committee



**Prof. Bruno Scrosati,**  
Chairman  
University of Rome  
Department of Chemistry  
Italy



**Jan Bartels**  
STIBAT  
Managing Director  
Netherlands



**Manfred Beck**  
Recycling International  
Magazine  
Editor  
Netherlands



**Jacques David**  
European Battery Recyclers  
Association (EBRA)  
Honorary President  
France



**Norm England**  
Rechargeable Battery  
Recycling Corp. (RBRC)  
President  
USA



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



**Steve Heddle**  
INMETCO Inc.  
President  
USA



**Andreas Krebs**  
Batrec Industrie AG  
Managing Director  
Switzerland



**Jill Ledger**  
SAFT  
Communication Director  
France



**Ernst Locher**  
Fernwärme Wien  
Manager  
Austria



**Kush Marolia**  
European Portable  
Battery Association (EPBA)  
Belgium



**Toshio Matsuoka**  
Matsuo Technical Consul. Ltd.  
Consultant  
Japan



**Johan van Peperzeel**  
W.A. van Peperzeel B.V.  
President  
Netherlands



**Dr. Jean-Pol Wiaux**  
RECHARGE  
Manager  
Belgium

## Keynote Speakers



**Dr. Hans-Peter FAHRNI**  
Federal Office for the  
Environment FOEN  
Head of Division  
Waste and Raw Materials  
Switzerland



**Rosalinde VAN DER VLIES**  
European Commission  
DG Environment  
Sustainable Production,  
Consumption and Waste  
Administrator  
Belgium

## Location of the congress

The 11<sup>th</sup> International Congress for Battery Recycling will be held in the **Lindner Grand Hotel BEAU RIVAGE, Interlaken from 28 – 30 June 2006.**

**Lindner Grand Hotel BEAU RIVAGE \*\*\*\*\***  
Hoeheweg 211, 3800 Interlaken  
Phone + 41 (0)33 826 70 07  
Fax + 41 (0)33 826 70 26  
[www.lindnerhotels.ch](http://www.lindnerhotels.ch)



## Hotel Accommodation

For the participants of the congress a number of rooms are held **at a special rate** if you register **before May 16, 2006**. If you wish, you may also extend your stay at these lovely hotels at the same special rate.



**Lindner Grand Hotel BEAU RIVAGE \*\*\*\*\***  
Hoeheweg 211, 3800 Interlaken  
Phone + 41 (0)33 826 70 07  
Fax + 41 (0)33 826 70 26  
[www.lindnerhotels.ch](http://www.lindnerhotels.ch)

Congress place



**Hotel Interlaken \*\*\*\***  
Hoeheweg 74, 3800 Interlaken  
Phone + 41 (0)33 826 68 68  
Fax + 41 (0)33 826 68 69  
[www.interlakenhotel.ch](http://www.interlakenhotel.ch)

5 min. walk from the congress place



**Carlton-Europe Hotel \*\*\***  
Hoeheweg 94, 3800 Interlaken  
Phone + 41 (0)33 826 01 60  
Fax + 41 (0)33 826 01 69  
[www.carlton-europe.ch](http://www.carlton-europe.ch)

5 min. walk from the congress place

## Travelling to Interlaken

Interlaken is easily accessible by train and car. There are direct train connections from Zurich Airport and most other major Swiss cities every half hour. Take the train to Interlaken OST.

Train connections of the Federal Swiss Railways: [www.sbb.ch](http://www.sbb.ch)

Route map: [www.mappy.com](http://www.mappy.com)



# Congress Program ICBR 2006

## Wednesday, 28<sup>th</sup> June 2006

10.00 – 10.10	"Welcome and Introduction" <b>Prof. Bruno Scrosati, Chairman of the Steering Committee</b> <b>KEYNOTE SPEAKERS:</b>
10.10 – 10.35	<b>Dr. Hans-Peter Fahrni, Federal Office for the Environment FOEN, Switzerland</b>
10.35 – 11.00	<b>Rosalinde van der Vlies, European Commission, Belgium</b>
<b>Session 1:</b>	<b>Legislation</b>
<b>Session Chairman:</b>	<b>Prof. Bruno Scrosati, University of Rome, Italy</b>
11.00 – 11.30	"Producer's view on the new EU Battery Directive and its transposition into national law" <b>Dr. Raynald Dallenbach, EPBA, Belgium</b>
11.30 – 12.00	"The new Battery Directive: The position of the battery recycling industry" <b>Bertrand Schutz, EBRA, France</b>
12.00 – 13.30	<b>Lunch</b>
<b>Session 2:</b>	<b>European Collection</b>
<b>Session Chairman:</b>	<b>Dr. Jean-Pol Wiaux, Recharge, Belgium</b>
13.30 – 14.00	"How to increase the collection rate of spent batteries" <b>Alexander Brun, INOBAT, Switzerland</b>
14.00 – 14.30	"How to achieve the collection target" <b>Dr. Jürgen Fricke, GRS-Batterien, Germany</b>
14.30 – 15.00	"Development and status of the battery collection law and operations in Czech Republic" <b>Petr Kratochvil, ECOBAT, Czech Republic</b>
15.00 – 15.30	"Collection of batteries and accumulators in Luxembourg" <b>Robert Schmit, Administration of the Environment, Luxembourg</b>
15.30 – 16.00	<b>Coffee break</b>
16.00 – 16.30	"Collection schemes in the UK" <b>Chris Davey, WRAP, United Kingdom</b>
16.30 – 17.00	"2006 – New ambition for SCRELEC" <b>Jacques David, SCRELEC, France</b>
17.00 – 17.30	"Contribution of spent batteries to the metal flows of municipal solid waste" <b>Marnix Vangheluwe, EURAS, Belgium</b>
19.00	<b>Networking dinner</b>

## Thursday, 29<sup>th</sup> June 2006

<b>Session 3:</b>	<b>Overseas recycling systems</b>
<b>Session Chairman:</b>	<b>Toshio Matsuoka, Matsuoka Technical Consult. Ltd., Japan</b>
09.00 – 09.30	"Processing of the spent Li-ion and Li/MnO <sub>2</sub> batteries" <b>Prof. Júlio Carlos Afonso, Federal University of Rio de Janeiro, Institute of Chemistry, Brazil</b>
09.30 – 10.00	"Zinc is the best candidate of the recyclable fuel for electric vehicles" <b>D.Q. Yang, Powerzinc Electric, Inc., China</b>
10.00 – 10.30	"Recovering nickel, cadmium and cobalt from rechargeable batteries in the United States" <b>Todd Coy, Kinsbursky Brothers, Inc., USA</b>
10.30 – 11.00	<b>Coffee break</b>
11.00 – 11.30	"The recycling solution in the USA and Canada for manufacturers and marketers of rechargeable batteries and products containing them" <b>Norm England, Rechargeable Battery Recycling Corporation (RBRC), USA</b>
11.30 – 12.00	"Evermore's role in Taiwan's battery recycling industry" <b>Michelle Liu, Evermore International Environmental Co., Ltd., Taiwan</b>
12.00 – 13.30	<b>Lunch</b>
<b>Session 4:</b>	<b>Collection and recycling processes in Europe</b>
<b>Session Chairman:</b>	<b>Johan van Peperzeel, W.A. van Peperzeel BV, Netherlands</b>
13.30 – 14.00	"New recycling plant in Finland" <b>Jarmo Pudas, AkkuSer Ltd., Finland</b>
14.00 – 14.30	"Cobat – Collection campaigns in residual area" <b>Dr. Giancarlo Morandi &amp; Dr. Franco Macor, Cobat, Italy</b>
14.30 – 15.00	"Val'Eas®: An award-winning green recycling for Li-ion and NiMH batteries at industrial scale" <b>Daniel Chéret, Umicore, Belgium</b>
15.00 – 15.30	<b>Coffee break</b>
15.30 – 16.00	"Recycling efficiency at the reprocessing of primary batteries" <b>Prof. Bernd Friedrich &amp; Dr. Elinor Rombach, IME of the RWTH University of Aachen, Germany</b>
16.00 – 16.30	"Battery collection and recycling in Belgium: Recent developments in the light of the EU-Directive" <b>Lore Mariën, OVAM (Flemish Public Waste Agency), Belgium</b>
16.30 – 16.45	"Latest developments at Batrec" <b>Andreas Krebs, Batrec Industrie AG, Switzerland</b>
16.45	<b>Cocktail reception and poster presentations in the exhibition hall</b>

## Friday, 30<sup>th</sup> June 2006

Every participant may choose one of the following tours:

### Tour Batrec Industrie AG, Wimmis

(travel by bus, boat and train)



08.30	Departure by bus to the harbour
08.45 – 10.00	Romantic boat tour to Spiez Pick-up at Spiez by bus to BATREC Industrie AG in Wimmis
10.00 – 12.30	Visit of the recycling plant
12.45	Arrival at the train station in Spiez (where you may catch your train to the airports of Zurich, Bern, Basel and Geneva)
13.00	Arrival at the Hotel Lindner Beau Rivage, Interlaken

BATREC is the only battery recycling plant in Switzerland, located in Wimmis in the Bernese Oberland close to Eiger-Mönch-Jungfrau. The plant recycles used household batteries, Li-batteries, mercury contaminated waste and heavy metal containing electronics components. It is the world's first induction heated smelting furnace for batteries and other hazardous metal containing waste and has a capacity of 5000 tons per year.

**More information at: [www.batrec.ch](http://www.batrec.ch)**

### Tour Hydropower Plant Oberhasli KWO, Innertkirchen

(travel by bus)



09.00	Departure by bus to Innertkirchen
10.00	Arrival at Kraftwerke Oberhasli AG
10.30 – 11.30	Short walk to the Räterichsboden Dam and round tour inside the dam
11.30 – 13.00	Drive through the tunnel system to Grimsel 2 power plant followed by a visit of the crystal cavern
13.30	Break at the famous Aare canyon and 30 minutes time to walk through the beautiful canyon
15.00	Arrival at the train station in Interlaken (where you may catch your train to the airports of Zurich, Bern, Basel and Geneva)
15.10	Arrival at the Hotel Lindner Beau Rivage, Interlaken

Visit a leading hydropower plant in the Grimsel and Susten area and experience the impressive power plants, set in a unique landscape. Find out more about the production of hydroelectricity on a very interesting tour.

**More information at: [www.grimselstrom.ch](http://www.grimselstrom.ch)**

## 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 Birwil, Switzerland

Phone: +41 62 785 10 00  
Fax: +41 62 785 10 05  
info@icm.ch  
www.icm.ch



Jeanette Duttlinger  
Congress Organizer



Sandra Ammann  
Congress Assistant



Ying Liu  
Congress Assistant



Susann Schmid  
Congress Assistant



Yvonne Steiner  
Congress Assistant



Petra Fiorentin  
Congress Assistant

## “Meet your clients” Networking Dinner

On Wednesday, June 28, a special networking dinner will be organized in the beautiful restaurant „Harderkulm”, 1'322 m/4'337 ft above sea level.

This scenic summit offers some of the most spectacular views in the remarkable Jungfrau Region: A bird's-eye view of Interlaken, the lovely region around



the Lake Brienz and Lake Thun as well as a breathtaking scenery of the Eiger, Mönch and Jungfrau mountains.

Do not miss this perfect possibility to meet your business partners and register to this evening by means of the registration form.



A nostalgic funicular railway will bring you up to the top of “Harderkulm”.

## Exhibition

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 your chance and book your exhibition stand today!

# Beautiful Interlaken

## Why not extend your stay in Interlaken ?

Interlaken is the captivating "capital" of Switzerland's beautiful Bernese Oberland. The town is located between the lakes of Thun and Brienz, at the foot of the towering trio of the Eiger, Mönch and Jungfrau (Top of Europe).

Crystal-clear lakes, sparkling streams and fantastic falls, caressed by the rays of the sun. The towering trio of the Eiger, Mönch and Jungfrau, standing like stately sentinels over a wonderworld of eternal snow.

And between these captivating contrasts, a treasure trove of holiday delights just waiting to be discovered. Here are just a few of the many attractions which never fail to fascinate vacation visitors to the Interlaken region of Switzerland.

### Tourist Office:

Höheweg 37, 3800 Interlaken  
Phone +41 (0)33 826 53 00  
Fax +41 (0)33 826 53 75  
www.interlakentourism.ch



## Registration Fees

Registration for the congress should be made by means of the registration form. Participants registering and paying **before April 30, 2006** will benefit from a reduced registration fee.

Congress Fee	before April 30, 2006	after April 30, 2006
Fee for participants	€ 1'250.-	€ 1'350.-
Fee for speakers	€ 690.-	€ 790.-
Fee for students	€ 450.-	€ 490.-
Visit to BATREC (June 30, 2006)	€ 30.-	€ 50.-
Visit to KWO (June 30, 2006)	€ 30.-	€ 50.-
Networking dinner (June 28, 2006)	€ 90.-	€ 100.-
Networking dinner for accompanying persons (June 28, 2006)	€ 100.-	€ 110.-

**All prices excluding VAT of 7,6%**

### Additional Proceedings

If it is not possible for you to attend the congress, you can purchase the complete proceedings at EUR 340.-. 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, 5300 Turgi, Switzerland  
Beneficiary: ICM AG  
Account number: 447941-72  
IBAN: CH73 0588 5044 7941 7200 0  
Clearing number: 5885  
Swift code: AHHBCH22XXX

# Grimsel Power

The KWO is one of the biggest hydropower companies in Switzerland. Water stored in the dams primarily supplies electricity for the peak power periods in winter and high pressure power plants are able to react instantaneously to continually fluctuating electricity consumption. Thanks to Grimsel Power and the electricity from many other power plants, Switzerland's electricity supply is plentiful and reliable. 700 million cubic metres of rain, snow and sleet fall into the catchments area of the KWO per year: equivalent to the household water used by 4 million people in the same period.

9 power plants housing 26 turbines generate 1062 megawatts of electricity a day: equivalent to the power of 3'000 trucks (but without the exhaust fumes). 2'300 Gigawatts of electricity are produced by the KWO in a year: enough electricity to satisfy the electricity needs of one million European users.



CH-3862 Innertkirchen  
Tel. +41 33 982 20 11 · Fax +41 33 982 20 05

# Recycling of

## Household batteries

- Unsorted batteries
- Non mercury free batteries
- Button cells

## Lithium batteries

- Lithium primary cells
- Lithium secondary cells

## Mercury contaminated waste

- Activated carbon
- Sludges and slurries
- Amalgams
- Mercury waste



# BATREC

Batrec Industrie AG  
CH-3752 Wimmis  
Phone +41 (0)33 657 85 00  
Fax +41 (0)33 657 85 01  
Mail [info@batrec.ch](mailto:info@batrec.ch)  
[www.batrec.ch](http://www.batrec.ch)