

Fax to ++49(0)541|9633-990

## Registration: »Superconductor«

please fill in:

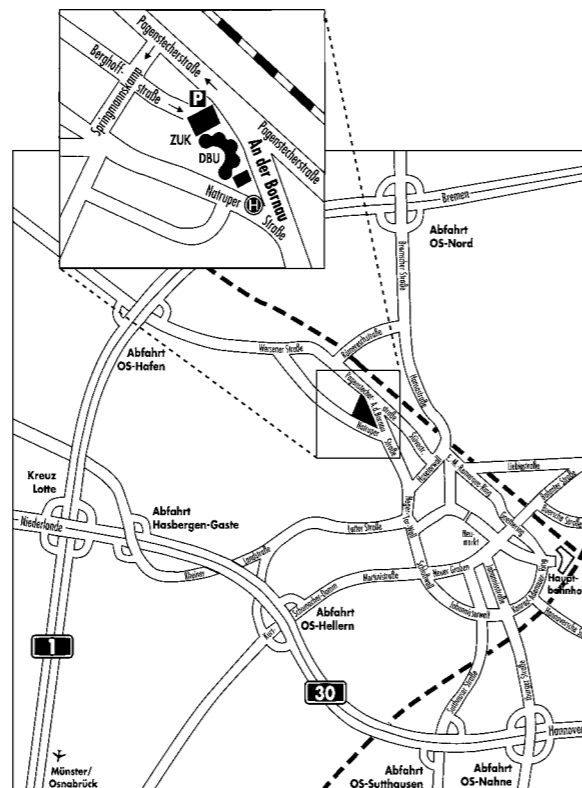
name
first name
affiliation
address
phone
e-mail

Please return this form as binding registration by fax soonest possible but not later than

**February 5, 2007**

to Carla Tusche, Zentrum für Umweltkommunikation der Deutschen Bundesstiftung Umwelt gGmbH, ZUK, Fax ++49(0)541|9633-990. Please contact us by e-mail (c.tusche@dbu.de) in case you have any queries.

Since the number of participants attending this conference is limited, you will get a separate confirmation and invoice. Please transfer the conference fee to the account stated in the invoice. Furthermore we point out that the fee is due in full amount, if you fail to cancel your registration in writing before February 19, 2007.



### Conference venue:

Zentrum für Umweltkommunikation der Deutschen Bundesstiftung Umwelt gGmbH, An der Bornau 2, 49090 Osnabrück.

### How to find us:

**By train and bus:** Arriving at Osnabrück main station, take bus 31|33, 81|82 or 91|92 from bus platform 1 (every few minutes) to »Neumarkt«. There, go to platform A2 and take bus 11|12|13 (every 10 minutes) or bus 21 (every 20 minutes) to bus stop »Umweltstiftung« (travel time about 20 minutes).

**By car:** Osnabrück is conveniently reachable from the Ruhr area and the North German cities on the Autobahn A 1; from the Netherlands and from direction Hanover on the A 30, respectively. From direction Bielefeld, you get here on the highway A 33. See also: <http://www.dbu.de/Anreise>

**By plane via Airport FMO (Münster/Osnabrück):** At FMO a regular bus-shuttle-service (X 150) is available; schedule at <http://www.fmo.de>. The trip takes around 40 minutes and terminates at Osnabrück main station.

### Accommodation:

Travel and accommodation expenses are payable by the participants. Please book hotel rooms on your own. Rooms are available at special rates (breakfast inclusive). Reference: Superconductor.

Dom-Hotel, Kleine Domsfreiheit 5, 49074 Osnabrück,  
++49(0)541|35835-0 66.00 €/single room

Hotel Welp, Natruper Str. 227, 49090 Osnabrück,  
++49(0)541|91307-0 53.00 €/single room

Hotel Westermann, Koksche Str. 1, 49080 Osnabrück,  
++49(0)541|98114-0 54.00 €/single room

See also: <http://www.osnabruecker-land.de>

### Conference fees:

The conference fee amounts to € 50.00 containing € 21.00 incl. 19 % VAT for food and beverage, which is levied on behalf of the company Food Et Event, Osnabrück. Thus, a tax-free flat rate of € 29.00 is part of the conference fee.

### Registration:

By fax to ++49(0)541|9633-990.

### Deadline: February 5, 2007

### Cancellation:

Cancellations free of charge are possible before Feb 19, 2007. Thereafter the fee is due in full amount. Only written cancellations will be accepted.

## Technical and Economical Impact of Superconductors on Wind and Hydro Power

In cooperation with  
BWE – Bundesverband Windenergie,  
FGW – Fördergesellschaft Windenergie,  
ivSupra – Industrieverband Supraleitung and  
Conectus – Consortium of European Countries  
determined to use Superconductivity



## Technical and Economical Impact of Superconductors on Wind and Hydro Power

High temperature superconductivity (HTS) is the elimination of Ohmic resistance to the flow of electric current at temperatures significantly higher than in conventional metallic superconductors, and even above the boiling point of liquid nitrogen (77 Kelvin). HTS wire has application wherever large currents are to be transported efficiently, or wherever high magnetic fields are to be created in a compact way.

The application of the high temperature superconductors is broadly regarded as one of the key technologies of the 21<sup>st</sup> century. HTS wire enables energy-efficient electrical machinery that use far less energy and creates more powerful magnetic fields than larger, heavier magnets that use conventional materials, such as copper. Opportunities to use the new technology are seen in almost all equipment areas of the electric energy technology. Volume and weight savings of up to 65 percent are expected through these new materials.

In the past two decades, the HTS materials were therefore tested systematically worldwide and procedures developed in order to make these materials usable for technical applications. Industrial applications are now being commercialized.

- The most significant applications of HTS are
- electric infrastructure:  
renewable power generators, fault current limiters, power transmission cables
  - industry:  
electric motors, induction heaters
  - transportation:  
ship propulsion, traction transformers
  - science and healthcare:  
MRI, high field magnets, current leads

The workshop is directed to all decision makers in R&D or product development. Representatives from manufacturing plant suppliers and interested operators will be given an overview of the current state-of-the-art.



Superconductor compared with conventional copper cable.

## Monday, February 26, 2007

- 09:00 Check-in open
- 09:45 **Welcome and introduction**  
*Dr. Wulf Grimm*, Deutsche Bundesstiftung Umwelt, Osnabrück
- 10:00 **Significance of renewable energy in times of changing supply structures**  
*Peter Vaessen*, KEMA, Arnhem
- 10:30 **Status and potential of superconductors for power applications**  
*Jens Müller*, Trithor GmbH, Rheinbach
- 11:00 Coffee break
- 11:30 **Requirements for next generation wind turbines**  
*Jens Peter Molly*, DEWI – Deutsches Windenergie-Institut, Wilhelmshaven
- 12:00 **3<sup>rd</sup> generation wind power generator based on superconductivity**  
*John Hill, Derek Grieve*, Convertteam, Rugby
- 12:30 Joint lunch
- 13:30 **Superconducting devices for optimization of renewable electric power systems**  
*Prof. Peter Komarek, Prof. Mathias Noe*, Forschungszentrum Karlsruhe
- 14:00 **Rotating electric machines based on high temperature superconductors**  
*Joachim Fraunhofer, Klemens Kahlen*, Siemens AG, Erlangen

- 14:30 **Superconducting hydro generator in an E.ON hydropower station**  
*Stefan Meyer, Ulrich Fuchs*, E.ON Wasserkraft GmbH, Landshut
- 15:00 **Industrial view on the impact of HTS for wind power**  
*Uwe Hinz, Roland Weitkamp*, RePower Systems AG, Hamburg
- 15:30 **Panel discussion**
- 16:00 **End of workshop**

Each talk is scheduled 20 minutes plus 10 minutes for discussion. Conference language is English, no translation.

The Deutsche Bundesstiftung Umwelt (Federal Environmental Foundation of Germany) is organising this event to promote innovative applications of superconductivity in the field of renewables.



Offshore wind power plant.