

## Information for the participants

For the participation we kindly request you to return the registration form to the GDMB Office by May 18, 2010 at the latest. The invoice for the short course fees which is likewise the confirmation of participation will be sent to you in due time.

Participation in the Short Courses is limited and is on a first registered, first accepted basis. Each Short Course participant will receive a copy of the short course notes, which will be available only at the short course itself. The notes will be an invaluable reference on the topics covered by the short course. All rights reserved by the organizing committee to change the course of the programme especially the order of the lectures. The organizers reserve the right to cancel the short course, if the registration is inadequate, and a full refund will be provided in such circumstances.

We have pre-reserved hotels at Hamburg, see [www.cu2010.gdmb.de](http://www.cu2010.gdmb.de), accommodation. Please do the room reservation by yourself as soon as possible in the hotel you have chosen under the keyword "GDMB-Copper".

For members of GDMB, IIMCh, MetSoc, MMIJ, TMS, SME the short course fees amount to 380 EURO, the short course fees for non-members amount to 520 EURO. Participants of company-members participate at the price for members. We offer 50 % discount for Students before the first examina. The short course fees include the participation in the technical lectures, coffee breaks, lunch and the metallurgical evening. The Short Courses fees are immediately due after the reception of the bill and have to be paid (free of charges) to the account 5140 at Sparkasse Goslar/Harz, BLZ 268 500 01 (S.W.I.F.T.-Bic: NOLA DE 21 GSL, IBAN: DE33 2685 0001 0000 005140), stating the number of the bill. Credit cards are accepted.

If the registration is cancelled before May 18, 2010, a processing fee of 25 % of the registration fees will be levied. In case of cancellation after May 18, 2010, the registration fee cannot be refunded. The registration may be transferred to a substitute.

## Registration form

Short Course on  
Sulphuric Acid Production Technologies  
at June 5, 2010

I am member of GDMB , IIMCh ,  
MetSoc , MMIJ , TMS/SME .

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Name, First Name Title

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Company/Institute

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Company address

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E-mail

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Telephone- and Telefax-number

Metallurgical Evening yes no

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Date, Signature

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**please return to:** GDMB  
Gesellschaft für Bergbau, Metallurgie,  
Rohstoff- und Umwelttechnik e. V.  
Paul-Ernst-Straße 10  
38678 Clausthal-Zellerfeld, Germany  
Telefax: 05323 / 937 937

GDMB Gesellschaft für  
Bergbau, Metallurgie, Rohstoff- und  
Umwelttechnik e. V.

## Short Course on Sulphuric Acid Production Technologies

Organized by: Dipl.-Ing. Norbert L. Piret

June 5, 2010

In conjunction with



June 6-10, 2010 - Hamburg, Germany  
Organized by GDMB Gesellschaft für Bergbau, Metallurgie, Rohstoff- und Umwelttechnik e.V.

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Venue: Aurubis AG  
Hoovestraße 50  
20539 Hamburg, Germany  
Telephone: +49 5323 937 959  
Telefax: + 49 5323 937 937  
E-mail: Cu2010.gdmb.de

Saturday, June 5, 2010: Short Course on  
**Sulphuric Acid Production Technologies**

Organized by: Dipl.-Ing. *Norbert L. Piret*

8.00 h **Registration** at Aurubis AG, Hoovestraße 50, 20539 Hamburg, Germany, and **delivery of course material**

8.30 h Welcome: Dipl.-Ing. *Michael Kopke*, Dipl.-Ing. *Norbert L. Piret*, *Paykan Safe*, Prof. *Peter Paschen*

8.45 h *M. J. King*, Hatch Associated Pty., Perth, W.A., Australia

**Recent Developments and Future Directions in Sulphuric Acid Manufacture**

The fundamentals of sulphuric acid making are briefly reviewed. The state of art of single versus double contact acid plants and of the dry gas versus wet gas treatment options, as well as heat recovery performance and energy efficiency is outlined. Recent developments and future trends in acid making are discussed.

9.45 h *Doug Louie*, WorleyParsons M&M, Mississauga, Ont., Canada

**Design Considerations for Sulphuric Acid Plants**

This Short Course will focus in detail for each of the sections of sulphuric acid plant and heat recovery system, on its specific purpose, on the theory and practice of operation, consumables and power consumptions.

Available design and options, as well as sizing criteria, will be outlined.

10.45 h Coffee Break

11.15 h *Bastian Mahr*, *Martin Kürten*, Bayer Technology Services (BTS), Leverkusen, Germany

**Simulation for Sulphuric Acid Plants**

Basic principles, general capabilities and advantages of process simulation, in relation to the design of sulphuric acid plant, as well as to the optimisation of existing acid plants. Simulation will be exemplified by art-of-practice cases including, amongst others, the simulation of heat – integrated double contact process and the newly developed and commercialized BayQIK technology.

12.15 h *Karl-Heinz Daum*, Outotec GmbH, Oberursel, Germany

**Manufacturing of Sulphuric Acid from Copper Smelter Gases**

Sulphuric acid production from copper smelter process gases is outlined, including optimisation of the integrated circuit. Selected copper smelter acid plants are reviewed. The newly developed LUREC process for high strength SO<sub>2</sub> gas is highlighted. Special attention is drawn to achieving quality of acid regarding contaminants such as Hg, F and NO<sub>x</sub>. Acid recovery from acid plant wash

13.15 h Lunch

14.15 h *Daniel Freeman*, SNC-Lavalin Fenco, Canada  
**Maturing Metallurgical Acid Plants and Capacity Creep**

This Short Course highlights the design evolution and resulting capacity improvement in sulphuric acid manufacturing. The major acid making processes, based on metallurgical SO<sub>2</sub> gases and sulphur burning, including sulphur handling and smelting, are described. Thereby attention is drawn to the important implemented equipment improvements achieved recently.

15.15 h *Andrew Kelleher*, Bayer Technology Services (BTS), Leverkusen, Germany

**Materials Selection and Design for Sulphuric Acid Production Plants**

This Short Course focuses not only on the corrosion resistant materials of construction, applied in acid making, but outlines the fundamentals of acid corrosion and the theory of passivation, exemplified by case studies of failures. The usefulness of the BTS BayPRINCE Software to assist material selection is demonstrated.

16.15 h Coffee Break

16.45 h *Alain Strickroth*, CPPE Carbon Process & Plant Engineering GmbH, Frankfurt, Germany

**Sulfacid Technology: Theory and Application**

The theory of acid production by the Sulfacid process is outlined. Discussed are its applicability, its specific operating features, range of applications, product specification. The Sulfacid process commercial implementation history is highlighted.

Event

19.30 Uhr Metallurgical Evening at Aurubis, "Alte Schlosserei"