

Two exciting conferences for the nanotechnology industry - UPDATED FINAL PROGRAMMES

14-15 March 2007, Crowne Plaza Europa, Brussels, Belgium

Nanocomposites ²⁰⁰⁷

**Closing the gap between research and reality,
and showcasing progress in materials and processing**

Including key organisations such as :

- **Toyota Technological Institute**
- **InMat**
- **Degussa**
- **Fraunhofer Institute**
- **Centexbel**
- **Mayer, Brown, Rowe and Maw LLP**
- **BYK-Chemie**
- **Sachtleben**

NOW IN
ITS 7TH
SUCCESSFUL
YEAR!

16 March 2007, Crowne Plaza Europa, Brussels, Belgium

Nanotubes ²⁰⁰⁷

**Discover the hottest technological advances at the only
meeting point for the global nanotubes community**

Featuring presentations from:

- **Lockheed Martin Missiles and Fire Control**
- **Kabelwerk Eupen**
- **Amroy Research Centre**
- **Thomas Swan & Co**

To register

Tel: +44 (0)20 7841 4811 (International)

Tel: 0845 056 5069 (UK only)

Fax: +44 (0)20 7505 6001

Email: EPNconferences@emap.com

Online: www.nanosconference.com

Supported by:



Nanocomposites 2007 is sponsored by:



Nanotubes 2007 is sponsored by:



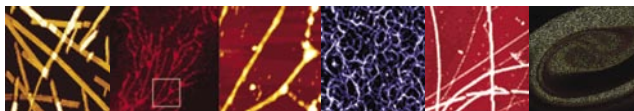
Organised by:



Nanocomposites²⁰⁰⁷

Nanotubes²⁰⁰⁷

European Plastics News and Plastics & Rubber Weekly present the full programmes for Nanocomposites 2007 and Nanotubes 2007 - two of the key events in the international nanotechnology calendar.



Now in its seventh year, **Nanocomposites 2007** will feature a wealth of industry expertise, both from established players and a number of new entrants. The conference will showcase development in nanocomposites, looking at both clay and metal oxide fillers, as well as innovations such as nanocomposites in bioplastics. Speakers will also address the key issues of commercialisation, processing and the forthcoming REACH regulation.

As well as detailing some of the most exciting applications for nanotubes, such as aerospace and flame retardancy, **Nanotubes 2007** will feature an extended health and safety session, detailing possible threats to the industry.

Why you should attend

- This is one of the **longest-established nanotechnology events**. If you want to learn or hear about the latest developments, this is the place to do it.
- Our speaker panel includes some of the **key companies in the nanotechnology industry** – where else will you have one focused opportunity to hear from them all?
- Not only are the programmes packed with informative presentations, they also feature **valuable networking opportunities** to help you get the most out of your time.
- This is an exciting time for the nanotechnology industry – attending this conference will help you find out and **predict how the industry will develop and what opportunities will become available**.

Nanocomposites

2007

14-15 March 2007, Crowne Plaza Europa, Brussels, Belgium

Day One – Wednesday 14 March 2007

08.00 Registration and refreshments

09.30 Chairman's opening remarks

Chris Smith

Editor and Conference Manager
European Plastics News

INNOVATION

09.45 Polymer Innovation Meets
Nanotechnology

- Nanomaterials as a laser welding optimiser
- Improving mechanical performance
- Functional Films

Dr. Manfred Spindler

Management Board Member
Degussa

MATERIALS

10.15 Developments in nanofillers

- Improved stiffness without loss of impact strength
- Improved barrier characteristics
- Improved flame retardancy by formation of three-dimensional inorganic networks

Dr. Joachim Grossmann

Vice President Marketing and Sales
Plastic Additives, **Süd-Chemie**

10.45 Question and answer session

11.00 Networking break

MATERIAL PROPERTIES

11.30 Presenting new layered double hydroxides for enhanced flame retardancy & Progress with PVC nanocomposites

- A new nanocomposite class of flame retardants
- A comparison of layered double hydroxides with classical flame retardant additives such as ATH and also with organoclays based on modified montmorillonites
- Processing benefits of layered double hydroxides
- PVC nanocomposites

Dr. Günter Beyer

Manager of Chem.-Phys. Laboratories
Kabelwerk Eupen

METAL OXIDE MATERIALS

12.00 TiO₂-/BaSO₄- nanoparticle reinforced composites

- Production and properties of nanocomposites
- Influence of ultrafine TiO₂ and BaSO₄ on the mechanical and tribological properties

Dr. Petra Fritzen

Business Centre Plastics **Sachtleben**

12.30 Question and answer session

12.45 Lunch

NEW PROCESSING TECHNOLOGY

14.00 Advances in the use of nano-fillers with different surface charge densities for nanocomposite formation, and exploring their application in solid-state processing

- Revealing an innovative compounding process for nanocomposites with exfoliated layered fillers
- An overview of solid-state processing
- Outlining the character of the various nano-fillers available, and their interlayer structures
- Examining the effect of surface charge density on intercalation
- An overview of Poly(p-phenylenesulphide)-based nano-composite formation
- Potential applications

Professor Dr. Masami Okamoto

Advanced Polymeric Nanostructured Materials Engineering
Toyota Technological Institute

TECHNOLOGICAL UPDATE

14.30 Electrically and thermally conductive nanocomposites: heating and sensing applications

- Outlining conductive polymer nanocomposites and their applications
- Sharing techniques to enhance the dispersion and aggregation levels
- Strategies to confine nanocomposites to specific areas
- Presenting two applications for conductive polymer nanocomposites – self-regulated heating and vapour sensing

Prof. Jean-François Feller

Laboratory of Polymers, Properties at Interfaces & Composites
University of South Brittany

ENHANCED PROCESSING

15.00 Sharing the results of a comparative study on processing of nanoparticulate fillers in thermoplastics and their influence on tribology

- Comparison of melt blending in Buss-Kneader, twin-screw and PGSS
- Enhancing the processing of nanoparticles by supercritical CO₂ in melt processing?
- Considering the influence of nanoparticulate fillers on tribological and surface properties

Jürgen Bertling, Business Unit Manager – Advanced Materials
Fraunhofer Insitute UMSICHT

15.30 Question and answer session

15.45 Afternoon refreshments

PROCESSING CLAYS

16.15 The Elementis approach to better exfoliated organoclay nanocomposites

- Advantages for Hectorite organoclay in nanocomposite applications
- Discussing organoclays with enhanced thermal stability
- Sharing specific examples and test results

Dr. Wouter Ijdo, R&D Manager,
Elementis Specialities

MATERIALS

16.45 Impact resistance in nanoclays with polyolefins

- Comparing the properties of impact-resistance modified polymers and providing a cost-benefit analysis
- Sharing details of nanocomposites in injection moulded components for domestic appliances

Dr. Susana Liberman, Researcher
Braskem

17.15 Question and answer session

17.30 Chairman's closing remarks and end of day one, followed by drinks reception

19.00 Conference dinner for all Nanocomposites 2007 delegates and speakers

DAY TWO – THURSDAY 15 MARCH 2007

08.30 Morning refreshments

09.25 Chairman's opening remarks

APPLICATIONS

09.30 Using nanocomposites to achieve high barrier solutions for the packaging industry

- Sharing details of how the nanocomposites industry is meeting the needs of the packaging industry
- Using nanocomposites for flexible and rigid plastic packaging, and outlining the potential for:
 - extending shelf-life
 - reducing costs
 - reduced environmental impact
- Current performance and future potential

Dr. Harris Goldberg, President & CEO
InMat

APPLICATIONS

10.00 Nanocomposites for textiles with enhanced properties

- How to obtain sufficient dispersion of the nanoparticles using standard textile processing techniques?
- Discussing how the material properties of textiles are enhanced by nanocomposites
- Is this another pie in the sky? When will nanocomposites in textiles come to fruition?

Dr. Mark Schaeerlaekens, **Centexbel**

LIVE REMOTE PRESENTATION

10.30 Nanocomposites in bioplastic applications

- Using nanocomposites to raise the barrier performance of bioplastic materials such as PLA and PHB for packaging applications
- Outlining the loading levels required and the cost of such a solution
- Exploring commercial applications

Dr. Amar K. Mohanty
School of Packaging
Michigan State University

11.00 Question and answer session

11.15 Morning refreshments

- 11.45 **Nanocomposites in thermoplastics**
- Discussing new compounding technologies
 - Exploring current test results
 - Sharing applications, such as UV protection
- Dr. Thomas Sawitowski**,
Head of Nanotechnology Department,
BYK-Chemie GmbH

12.15 – 13.15

EXTENDED REGULATORY SESSION

How should the nanocomposites industry prepare for the implementation of REACH?

- Clarifying the final shape and form of REACH, and the responsibilities of the entire supply chain
- Considering how REACH will impact the producers and compounders and how it may affect the trade of nanocomposites

Dr. Anna Gergely

Principal Scientific and Regulatory
Advisor

Mayer, Brown, Rowe & Maw LLP

13.15 Lunch

MATERIALS

14.30 **Processing and properties of polymers modified by nanoclays**

- Exploring the relationship between and matching nanoclays to the polymer to generate optimum performance
- Examining nanoclay functionalities and synergistic capabilities
- Developing formulations to generate desired properties with appropriate cost/performance characteristics

Karl Kamena, Commercial Manager
Southern Clay

APPLICATIONS

15.00 **Nano additives for halogen-free flame retardant extrusion articles**

- Discussing the incorporation of nanoparticles in the extrusion process
- Effective improvement of the flame retardancy in combination with APP
- Comparison of the properties of PP/APP nano-compounds with flame retardant PC/ABS (halogen-free)
- Outlining the cost efficiency of PP/APP nano-compounds

Dr. Stefan Reinemann, Head of the
Plastics Department, **Thüringisches
Institut für Textil- und Kunststoff-
Forschung e.V.** and

Dr. Udo Steffl, Head of Chemistry
Construction Department, **Rehau AG & Co**

STATE OF THE MARKET

15.30 **Considering when nanocomposites will reach their full potential, and how this can be facilitated**

- Are high-end, niche applications the way forward for nanocomposites?
- Is this the best business model for the commercialisation of nanocomposites?
- Futurology – what does the future hold? What will we be talking about Nanocomposites 2008?

Del Stark, Business Development
Manager, **European Nanotechnology
Trade Alliance**

16.00 Question and answer session

16.15 Chairman's closing remarks and close of
Nanocomposites 2007

²⁰⁰⁷
Nanotubes 16th March 2007, Crowne Plaza Europa, Brussels, Belgium

FRIDAY 16 MARCH 2007

08.00 Registration and refreshments

09.00 Chairman's opening remarks
Chris Smith, Editor and Conference
Manager, **European Plastics News**

EXTENDED JOINT SESSION

09.15 **Carbon nanotubes: Market overview, current and future commercial applications**

- A brief market overview
- Who is really producing today?

- Current status and perspectives of commercial applications for Nanocyl carbon nanotubes
- Key issues which must be solved before greater penetration
- Comparing the current price/performances of carbon nanotubes vs. other additives/technology
- Sharing details of case studies with Nanocyl product line
Olivier Decroly, Global Business
Development Manager, **Nanocyl**
session continued overleaf

Focus on particular new applications

- Reinforcement of elastomers
- Fiber reinforced composites
- New conductive systems
- Exploring other applications

Andy Rich, Nanocyl North America

10.00 **Aerostructure nanocomposites from single wall carbon nanotubes**
Dr. Leslie D. Kramer, Director - Chief Technologist Research and Technology, **Lockheed Martin Missiles and Fire Control**

10.30 Question and answer session

10.45 Morning refreshments

APPLICATIONS

11.15 **Nanotube coatings for aerospace applications**

- Exploring advances in:
 - strength enhancement
 - conductivity
 - thermal conductivity
- Looking at novel case study examples of nanotubes in use

David Vivancos, CEO, Science and Technology Chief Architect, **NanoEspacio**

PRODUCTION

11.45 **Liberating the nanotube - from lab to large scale production**

- Overview of Thomas Swan & Co Ltd
- Carbon nanotube development
- Challenges
- Quality and Safety
- Applications and Markets

Dr. Russell Clarke, Business Manager - Carbon Nanomaterials
Thomas Swan & Co Ltd

COMPETITION IN CONDUCTIVE MATERIALS

12.15 **An update on competitive developments in carbon blacks for conductive applications**

- Sharing details of the latest innovations in other conductive materials for applications such as ESD, or electronics packaging
- Overcoming the supply capacity hurdle - does Carbon Black have the advantage?

Dr. Thomas M. Gruenberger
 Head of Development
Timcal Graphite & Carbon

12.45 Question and answer session

13.00 Lunch

EXTENDED HEALTH AND SAFETY SESSION

14.15 **Are nanotubes the next asbestos? Considering the health and safety issues**

- Sharing information on the known health effects of nanotubes, both as raw materials and in compounds: what is actually known about nanotubes and any possible threats they pose?
- Considering the responsibilities of nanotube producers: what does the industry need to do?

Professor Ken Donaldson
 Respiratory Technology, Editor in Chief of "Particle and Fibre Toxicology"
University of Edinburgh Centre for Inflammation Research

UNVEILING NEW MATERIALS

15.00 **White alternatives to carbon nanotubes: Halloysites and sharing progress with Multi Wall Carbon Nanotubes as flame retardants**

- Material performances of Halloysites
- Outlining the potential for Halloysites as a nanodispersed flame retardant
- Progress with MWCNTs as flame retardants

Dr. Günter Beyer
 Manager of Chem.-Phys. Laboratories
Kabelwerk Eupen AG

APPLICATIONS

15.30 **Nanotubes in advanced epoxy resins for sporting goods applications**

- Using hybtonite epoxies to enhance material properties and prevent fatigue
- Outlining the performance advantages
- Sharing details of recent product case studies

Pasi Keinanen
Amroy Research Centre

16.00 Question and answer session

16.15 **Chairman's closing remarks and close of Nanotubes 2007**

Nanocomposites ²⁰⁰⁷

Nanotubes ²⁰⁰⁷

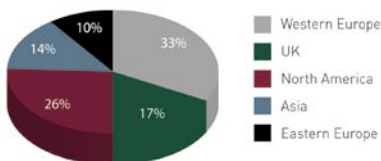
What's New?

This year, we're launching a conference dinner as part of the **Nanocomposites 2007** programme. All **Nanocomposites 2007** delegates will be able to join us at La Manufacture, one of Brussels' best-known and stylish restaurants, and relax with key players in the nanocomposites industry.



Who else will be there?

See where delegates from our previous Nanocomposites and Nanotubes conferences have come from.



Geographical breakdown of delegates from our previous Nanocomposites and Nanotubes conferences

Make the most of your time
Nanocomposites 2007 and **Nanotubes 2007** offer you a number of valuable opportunities to build your brand and raise awareness in the industry. If you want to take advantage of these, please contact Levent Tounjer International Sales Manager European Plastics News on **+44 (0)20 8277 5510** or **levent.tounjer@demap.com**

What others have said about our conference:

"A very well organised conference with many thought-provoking presentations and opportunities for networking" - Danish Polymer Centre

"Very good opportunity to see nanotechnology" - Samsung

"A comprehensive review of what's going on" - ICI

"The best nanocomposite conference in the world" - Honeywell

"A very focused event on state-of-the-art nanotubes" - Nokia

"Informative and interesting" - Lockheed Martin

Nanocomposites & Nanotubes 2007

14-16 March 2007, Crowne Plaza Europa, Rue de la Loi 107, Brussels 1040, Belgium

WAYS TO REGISTER

Tel: +44 (0)20 7841 4811 (Int'l)
0845 056 5069 (UK Only)
Fax: +44 (0)20 7505 6001
Email: EPNconferences@emap.com
Online: www.nanosconference.com

Post to: Nanocomposites 2007
& Nanotubes 2007 Conference
Registration, Ground Floor
33-39 Bowling Green Lane
London, EC1R 0DA, UK

Brochure code: WEB

Conference code: Y618

DELEGATE DETAILS (PLEASE COMPLETE IN BLOCK CAPITALS)

Title (Mr, Ms, Mrs, Dr) First Name
Surname
Job Title
Department
Company
Address
Town County
Postcode Country
Tel No Fax No
Email
Booking Contact (Sec/PA) Tel No
The nature of your company's business
No. of Employees (please tick) 0-49 50-249 250-499 500-999 1000+

PLEASE PHOTOCOPY THIS FORM TO REGISTER FURTHER DELEGATES

HOW TO PAY (PLEASE TICK RELEVANT PAYMENT OPTION)

■ CREDIT / DEBIT CARD

Card Number
Expiry Date - Issue No (for Switch):
Valid from: - (Compulsory for Diners Club and Switch) Amount €

■ CHEQUE

Please find enclosed a cheque for the amount of € made payable to Emap Conferences, and send to the address above (in **WAYS TO REGISTER** box).

■ INVOICE / BANK TRANSFER

Please note an invoice will be sent under a separate cover.
For any invoice queries tel: 01733 213700

Email (accounts contact)
Invoice Address (if different from above)

If paying by bank transfer please send your payment to:

National Westminster Bank, PO Box 12258, 1 Princes Street, London, EC2R 8PA

Account Name: Emap Support Services Ltd Credit Serv EUR

Account Number: 42023602 Sort Code: 60-00-01

IBAN: GB20 NWBK 6072 1442 023602 Swift Number: NWBK GB 2L

Purchase Order No. (where applicable)

I have read the cancellation policy and agree with the terms and conditions.
I authorise the use of my credit/debit card for the above payment.

Signature

DELEGATE RATES

Nanocomposites 2007:

14-15 March 2007
Please register ____ delegate(s) at the rate of €1349 + VAT @ 17.5%
= €1585.08

Nanotubes 2007: 16 March 2007

Please register ____ delegate(s) at the rate of €699 + VAT @ 17.5%
= €821.33

Nanocomposites 2007 AND

Nanotubes 2007:

14-16 March 2007
Please register ____ delegate(s) at the rate of €1799 + VAT @ 17.5%
= €2113.83

GROUP DISCOUNTS AVAILABLE

For information about group discounts please contact the conference team using the details to the left.

DATA PROTECTION

By entering your details in the fields to the left, you agree to allow EPN and PRW, Emap Communications and companies associated with this event to contact you (by mail, email, telephone, SMS or fax) regarding their services. If you do not wish to receive such communications please contact us in writing.

If you do not wish to receive mailings from other carefully selected companies please tick

BOOKING CONDITIONS

A confirmation letter will be sent, from our London Office within 3-5 working days from receipt of your booking. Please note that an invoice will be sent to you from our shared service centre in Peterborough within 7-10 working days. **Payment must be received before the conference date.** If payment is not received, delegates will be asked to guarantee payment with a personal credit card on the day.

CANCELLATIONS / SUBSTITUTIONS

Cancellations made before 14th February 2007 will be charged at 10% of the invoice total. Cancellations made between this date and 28th February 2007 will be charged at 50% of the invoice total. Cancellations made after this date will be charged the full invoice total. However you can send a substitute delegate at any time. Bookings received less than two weeks before the conference date can only be paid by credit card. Cancellations and substitutions must be made in writing.

ACCOMMODATION

Please contact the hotel, quoting this conference as a reference: +32 2230 1333. Please be aware that rooms are in short supply and the hotel cannot guarantee availability.

ACCESS REQUIREMENTS

To help us ensure that all delegates are able to participate fully, please let us know about any requirements you have by contacting the customer service team using the details above.

DIETARY REQUIREMENTS

We always provide vegetarian options at our conference lunches, but please let us know about any requirements you have by contacting the customer services team. All Nanocomposites 2007 delegates will be able to attend the conference dinner on 14 March 2007, but please let us know if you are vegetarian or have any dietary requirements.

CONFERENCE LANGUAGE

English

PLEASE NOTE

The conference fee covers entrance to all sessions, conference documentation, lunch, coffee/ refreshment breaks and the conference dinner for Nanocomposites 2007 attendees.

Please quote the conference code **Y618** and delegate's name in your correspondence