

NANOSAFE 2008: International Conference on Safe Production and Use of Nanomaterials

Journal of Physics: Conference Series Volume 170

**Grenoble, France
3-7 November 2008**

ISBN: 978-1-61738-313-7

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2008) by the Institute of Physics
All rights reserved.

Printed by Curran Associates, Inc. (2010)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Accepted papers received: 6 May 2009

Published online: 12 June 2009

PREFACE

FREE ARTICLE [Nanosafe 2008: International Conference on Safe production and use of nanomaterials](#) Carole Sentein, Frédéric Schuster and Francois Tardif

FREE ARTICLE [Peer review statement](#)

EXPOSURE ISSUES

[3 "Nanoparticles monitoring in workplaces devoted to nanotechnologies](#) Laura Manodori and Alvise Benedetti

[7 "Experimental investigation on blood magnetic contamination in the presence of drug molecules](#) D E Creangă, G H Iacob and C Nădejde

[33 "Dustiness testing of engineered nanomaterials](#) Isamu Ogura, Hiromu Sakurai and Masashi Gamo

[37 "Workplace exposure at nanomaterial production processes](#) Carsten Möhlmann, Johannes Welter, Martin Klenke and Jürgen Sander

CHARACTERIZATION, DETECTION AND MONITORING

[42 "On the performance of a calibrated nanoparticle generator](#) Ulrika Backman, Jussi Lyyränen, Unto Tapper, Ari Auvinen and Jorma Jokiniemi

[46 "Experimental study of the response functions of direct-reading instruments measuring surface-area concentration of airborne nanostructured particles](#) Sébastien Bau, Olivier Witschger, François Gensdarmes and Dominique Thomas

[54 "From nanoparticles to large aerosols: Ultrafast measurement methods for size and concentration](#) Lothar Keck, Jürgen Spielvogel and Hans Grimm

[59 "Lung toxicity determination by *in vitro* exposure at the air liquid interface with an integrated online dose measurement](#) Sonja Mülhopt, S Diabaté, T Krebs, C Weiss and H-R Paur

[63 "An overview of the characterization of occupational exposure to nanoaerosols in workplaces](#) Paola Castellano, Riccardo Ferrante, Roberta Curini and Silvia Canepari

[68 "Specific response of SMPS particle counter to CNT](#) Luana Golanski, Stéphanie Bernard, Arnaud Guiot, Olivier Poncelet, Hélène Le Poche and François Tardif

[74 "A size selective nanoparticle collection device based on diffusion and thermophoresis](#) Jussi Lyyränen, Ulrika Backman, Unto Tapper, Ari Auvinen and Jorma Jokiniemi

[85 "Suspension characterization as important key for toxicological investigations](#) Tobias Meißner, Annegret Potthoff and Volkmar Richter

[8; "Dispersion and stability of TiO₂ nanoparticles synthesized by laser pyrolysis in aqueous suspensions](#) Carole Sentein, Benoit Guizard, Sophie Giraud, Chang Yé and François Ténégal

NANOMATERIALS LIFE CYCLE

[98 "Measurement of nanoparticle removal by abrasion](#) Arnaud Guiot, Luana Golanski and François Tardif

[: 2 "Labelling nanoparticles by nanotracers and oligonucleotides](#) F Tardif, O Raccourt, L Golanski, A Auger, J Liu, A G Brachet, D Jary, F Vinet and C Peponnet

TOXICOLOGY

[: 7 "SiC nanoparticles cyto- and genotoxicity to Hep-G2 cells](#) Sabrina Barillet, Mary-Line Jugan, Angélique Simon-Deckers, Yann Leconte, Nathalie Herlin-Boime, Martine Mayne-l'Hermite, Cécile Reynaud and Marie Carrière

[; 2 "Biokinetics and effects of titania nano-material after inhalation and i.v. injection](#) Robert Landsiedel, Eric Fabian, Lan Ma-Hock, Karin Wiench and Bennard van Ravenzwaay

[; 6 "Evaluation of MWNT toxic effects on daphnia and zebrafish embryos](#) Maider Olasagasti, Noelia Alvarez, Carolina Vera and Sandra Rainieri

[; ; "Magnetic nanoparticle effects on the red blood cells](#) D E Creangă, M Culea, C Nădejde, S Oancea, L Curecheriu and M Racuciu

[326 "Antibacterial activities of PHU – AgNO₃ nanocomposite](#) Carmen Panzaru, M Danciu, C Ciobanu and Maria-Sultana Mihailovici

[32: "Quantum Dots: Proteomics characterization of the impact on biological systems](#) Stefano Pozzi-Mucelli, F Boschi, L Calderan, A Sbarbati and F Osculati

[335 "Cytotoxicity of titanium and silicon dioxide nanoparticles](#) Stefanie Wagner, Simon Münzer, Peter Behrens, Thomas Scheper, Detlef Bahnemann and Cornelia Kasper

COMMERCIAL EQUIPMENTS RELATED TO SAFE PRODUCTION AND USE OF NANOMATERIALS

[343 "The first equipment for protection from nanoparticles](#) Louis-Paul Faure, Pierre Bombardier and Jean-Marie Reinwalt

[349 "New methods and standards for fine dust](#) Jürgen Spielvogel, Stefan Hartstock and Hans Grimm

PERSONAL PROTECTION AND SECURE INDUSTRIAL PRODUCTION

[354 "Experimental evaluation of individual protection devices against different types of nanoaerosols: Graphite, TiO₂ and Pt](#) Luana Golanski, Arnaud Guiot and François Tardif

[35: "Lessons learnt over 30 years of air filtration in the nuclear industry](#) J Vendel, J C Laborde, N Michielsen and F Gensdarmes

[365 "Spray drying for processing of nanomaterials](#) Jesper Sæderup Lindeløv and Michael Wahlberg

[372 "Nanoparticles filtration by leaked fibrous filters](#) Guillaume Mouret, Sandrine Calle-Chazelet, Dominique Thomas, Denis Bemer and Jean-Christophe Appert-Collin

SAFETY PARAMETERS EVALUATION

[379 "Risk of dust explosions of combustible nanomaterials](#) Ritsu Dobashi

[385 "Material scientific approach to predict nano materials risk of adverse health effects](#) Yasuto Matsui, Kenichi Miyaoi, Takeshi Hayashi and Yukio Yamaguchi

[38; "Estimation of health risks and safety margins due to inhalation of ultrafine particles and nanoparticles in selected occupational, consumer and environmental settings](#) Otto Hänninen, Irene Brüske-Hohlfeld, Miranda Loh, Tobias Stoeger, Wolfgang Kreyling, Otmar Schmid and Annette Peters

[396 "Explosion risks from nanomaterials](#) Jacques Bouillard, Alexis Vignes, Olivier Dufaud, Laurent Perrin and Dominique Thomas

[39: ""Visualization of nano risk research field to clarify domains year by year](#) Yasuto Matsui, Takeshi Hayashi, Kenichi Miyaoi, Hironori Tomobe, Yuya Kajikawa, Katsumori Matsushima and Yukio Yamaguchi

[3: 6 "The NANOFEU project: Objectives and tools](#) Didier Calogine, Stephane Duplantier, Carine Chivas, Eric Guillaume, José-Marie Lopez-Cuesta, Claire Longuet, Benoit Minisini, Francis Gensous and Loïc Chesné

[3: ; "Nanotechnologies: Risk assessment model](#) F Giacobbe, L Monica and D Geraci

STANDARDIZATION, REGULATIONS AND EDUCATION

[3; 5'"Current standardisation for nanotechnology](#) Delphine Bard, David Mark and Carsten Möhlmann

[3; ; "Guidelines for safe handling, use and disposal of nanoparticles](#) G H Amoabediny, A Naderi, J Malakootikhah, M K Koohi, S A Mortazavi, M Naderi and H Rashedi

MAIN PROJECTS IN EUROPE

[433"The NanoCare project: A German initiative on health aspects of synthetic nanoparticles](#)
Katja Nau and Harald F Krug

[437"Development of methodology for alternative testing strategies for the assessment of the toxicological profile of nanoparticles used in medical diagnostics. NanoTEST – EC FP7 project](#) Maria Dusinska, Lise Maria Fjellsbo, Elbjorg Heimstad, Mikael Harju, Alena Bartonova, Lang Tran, Lucienne Juillerat-Jeanneret, Blanka Halamoda, Francelyne Marano, Sonja Boland, Margaret Saunders, Laura Cartwright, Sara Carreira, Susan Thawley, Maurice Whelan, Christoph Klein, Christos Housiadas, Katarina Volkovova, Jana Tulinska, Milan Beno, Katarina Sebekova, Lisbeth E Knudsen, Tina Mose, José V Castell, Maya R Vilà, Lourdes Gombau, Mark Jepson, Giulio Pojana and Antonio Marcomini

[442"NANOINTERACT: A rational approach to the interaction between nanoscale materials and living matter?](#) Iseult Lynch, Sara Linse, C Vyvyan Howard, Maciej Stepnik, Konrad Rydzynski, John Hanrahan, Wim de Jong, Dominique Langevin, Joachim Rädler, Wolfgang Parak, Yuri Volkov, Marek Radomski, Robert Thomas, Jacob Klein, Andrew A Barron, Colin Janssen, Fiona M Lyons, Francis Quinn, Bert Swennen, Peter Cuypers, Angela Duffy and Kenneth A Dawson