6th International Symposium on Nanotechnology, Occupational and Environmental Health

The aim of the symposium is to provide a scientific forum for researchers and practitioners to present and discuss the latest researches on occupational and environmental health issues of nanotechnology.

Date: **October 28 (Mon) → 31 (Thu), 2013**

Place: **Nagoya, Japan**

Venue: **Nagoya Congress Center**

Topics

- **Nanomaterial processing and characterization**
- **Health effects and toxicity (in vivo, in vitro)** of manufactured nanomaterials
- **ADME** (Absorption, distribution, metabolism and excretion) and methodology for **kinetic study** of manufactured nanomaterials
- **Environmental toxicity** of manufactured nanomaterials
- **Exposure assessment** in the workplaces producing or handling manufactured nanomaterials
- **Risk assessment** of manufactured nanomaterials
- **Risk management** of manufactured nanomaterials
- **Outreach** for occupational and environmental health in nanotechnology
- **Epidemiology** on the workers exposed to manufactured nanomaterials
- **Worker protection**: Identifying and training the nanomaterial workforce




Organizers

Japan Committee for the 6th International Symposium on Nanotechnology, Occupational and Environmental Health / Planning Committee for the International Symposium on Nanotechnology, Occupational and Environmental Health

http://square.umin.ac.jp/nanoeh6/ Contact address: **nanoeh6-secretary@umin.org**

O-29-C-04 Environmental Protection of Public Health for Manufactured Nanomaterials: Europe Speaks with Two Voices

Ilise L Feitshans[1,2,3,4)]

[1)]Institute for Work and Health, University of Lausanne, Switzerland, [2)]Institute universitaire romand de santé au travail University of Lausanne, [3)]Geneva School of Diplomacy, Switzerland, [4)]Work Health and Survival Project, Switzerland

In 2012, the Council of Europe (CoE) Parliamentary Assembly began the first steps towards nanotechnology regulation with a view to respecting the scientific precautionary principles. T CoE is the health and human rights vanguard for law governing the right to health, public health and consumer protection throughout Europe , and its human rights court has remained a leading model for jurisprudence throughout the world. The CoE has 47 (forty seven) Member nations. Its jurisdiction therefore embraces 800 million people The human rights voice of the Council of Europe differs in its emphasis and force from the European Union. What is the content of their proposed initiatives, and what should Europe do in those areas where the content is conflicting, not the same?

The CoE commissioned an expertreport, "Nanotechnology: balancing benefits and risks to public health and the environment" prepared by author of this presentation. http://www.assembly.coe.int/Communication/Asocdoc27rev_2012.pdf

The report is an essential part of understanding the future public discourse concerning nanotechnology safety and the regulation of nanotechnology in commerce for 3 reasons:

1. praised because of its excellent synthesis of leading issues in nanotechnology regulation about environmental impact 2. CoE is using the report as one of several resources for determining which path it will follow regarding possible treaties or international agreements governing the use and monitoring of nanotechnology, in its view correcting what EU regulations ignore. 3. CoE legal instruments frequently are the basis of juridical determinations in the Court of Human rights and serve as influential models for the world.

O-29-C-05 Synthesis of C60-C70 two-component fullerene nanowhiskers by LLIP method

Kun'ichi Miyazawa[1)], Chika Hirata[1)], Toshio Konno[1)], Takatsugu Wakahara[1)], Ryosuke Kano[2)], Masaru Tachibana[2)]

[1)]National Institute for Materials Science (NIMS), Japan, [2)]Yokohama City University, Japan

Fullerene nanowhiskers (FNWs) are the fine-needle like crystals that are composed of fullerene molecules such as C60, C70, Sc3N@C80, C60[C(COOC2H5)2], and so forth. FNWs have two typical morphologies, i.e., non-tubular structure and tubular structure. Tubular FNWs are specially named fullerene nanotubes [1]. The liquid-liquid interfacial precipitation (LLIP) method is a powerful tool to synthesize FNWs, where a liquid-liquid interface is formed between a fullerene-saturated good solvent solution and a poor solvent of fullerene, followed by the diffusion of the two solutions. Since C60 and C70 have similar molecular sizes, they can form solid solutions, and hence the physical and chemical properties of C60 nanowhiskers (C60NWs) are expected to be variously changed by dissolving C70 molecules into the matrices of C60NWs. The first synthesis of the C60-C70 two-component nanowhiskers (C60-C70NWs) was performed in 2004 by using m-xylene solutions of fullerenes [2]. On the other hand, the size control of FNWs is necessary for their practical application. The growth of C60NWs is influenced by temperature, the wavelength of light, the composition and concentration of solution, the impurity water concentration and the growth time. Recently, we found that the growth of C60-C70NWs are markedly influenced by the relative composition of C60 and C70. For example, the length of C60-C70NWs takes the minimum value at C60-11.4mass%C70 in the composition range of C60-0 ～ 25mass%C70. In the presentation, the structural characteristics and growth mechanism for the C60-C70NWs will be shown.

[1]K. Miyazawa, J. Nanosci. Nanotechnol., 9 (2009)41

[2] K. Miyazawa et al., Proc. SPIE 5648, Smart Materials III, P.224 (February 16, 2004, doi:10.1117/12.581307).