

AUSA NanoSafety Group Newsletter

Welcome!

Dear AUSA NanoSafe Group members,

Welcome to the first issue of NanoSafe newsletter 2017! We hope everyone had a relaxing and great break at the end of last year. This issue is generic and covers a mixture of topics on nanomaterials and its safety management. We hope you enjoy reading it!

Xin, Julie and Maria

Group News

From 2017, the AUSA NanoSafe newsletter becomes quarterly issues. The release date for 2017 newsletters will be in March, June, September and December.

The 2017 AUSA Conference will be held over 20—22 June in Hobart. The theme of the conference is “Education and Research Safety Environment – Playing devil's advocate”. [Find out more...](#)

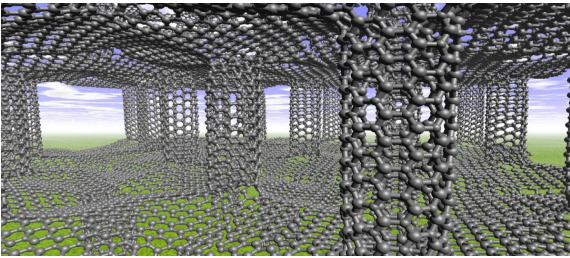
We welcome a new member, Linda Knobben, HSW Coordinator, Faculty of Health and Medical Sciences, University of Adelaide, to our group.

For those interested, Adelaide is bidding for a 2020 international conference on nanotechnology with strong emphasis on nanosafety. More details will be provided in the newsletter this year.

For group membership enquiry, please contact [Xin](#) directly.

Some New Publications

1. For those who may not be aware, the [European Union NanoSafety Cluster](#) is a great place to learn about some of the latest research on nanosafety in Europe. In 2016, the Compendium of Projects in the European NanoSafety Cluster was published. If you are interested, you can [access the July 2016 edition here](#).
2. Although we have discussed about nanosafety for a long time and the picture of nanomaterials' (NMs) health effect is getting clearer, no one has given definite answers to the actual effect of the engineered NMs. A paper titled '*The Proliferation of Nanomaterials: Possible Health and Environmental Consequences*' published in January 2017 reviewed some of the latest research in the field. The paper also analysed the exposure pathway and its potential for nanoparticles to toxify human in each pathway. [Access the paper...](#)
3. In Australia, the occupational exposure limits for nanomaterials have not been published but instead a benchmark exposure limit is recommended by Safe-Work. A new review 'Occupational exposure limits for manufactured nanomaterials, a systematic review' was published in 2017. This review examined over 20 studies and 56 occupational exposure limits. [Access the review ...](#)
4. There is also a new blog post on NOISH Science Blog and it summarised the challenges of identifying occupational exposure limits for new nanomaterials. It appears that WHO is also developing a guideline for working safely with engineered nanomaterials. [Access the blog post...](#)



5. Traditionally, nanosized graphene (left) are either considered safe or with unknown health hazard due to its sheet and matrix composition. A new study, 'Immunological effects of graphene family nanomaterials' found that graphene family nanoparticles (GFNs) have both immune system suppression and stimulation properties. However, the interaction of GFNs and the immune system is incidental (ie can not be controlled). This discovery of this property can assist design studies of targeted drug delivery but unfortunately, it also means in the safety management of GFNs, the immune system suppression must be taking into considerations. [Access the study ...](#)

GFNs are mainly used in Engineering research.

6. There have been a lot of discussions in our previous newsletter on risk assessment of nanosafety management, from risk matrix, control banding to tiered approaches. A new commentary 'The changing face of nanomaterials: Risk assessment challenges along the value chain' introduced a new risk management framework and a value chain RA approach. The method included in this paper is impressive but whether it can be applied in practice, especially in a University research setting, is still in question. [Access the paper ...](#)

7. Immobilised nanostructures are being studied in medical research. However, the safety of these newly formed nanostructures is not widely studied. A new study published in 2017 investigated the toxicity of Ag decorated Zinc Oxide (ZnO) nanomaterial and compared the toxicity of the individual component. Surprisingly, the study found that the toxicity of the new nanostructure is higher than the combined effect of individual nanoparticles. Of course, this is a pilot study completed in a small planktonic crustacean (Daphnia magna), not in human trials. [Read more...](#)

8. Do you want to know how much engineered nanomaterials workers are typically exposed to during the active generation stage? You may want to read the latest review 'Airborne engineered nanomaterials in the workplace—a review of release and worker exposure during nanomaterial production and handling processes'. The review categorised the active generation tasks of engineered nanomaterials described by various previous studies and included information on how much is released during the process and at the background. It can be useful if HSW professionals want to use the data as a guide to monitor/control various workplaces. [Read more...](#)

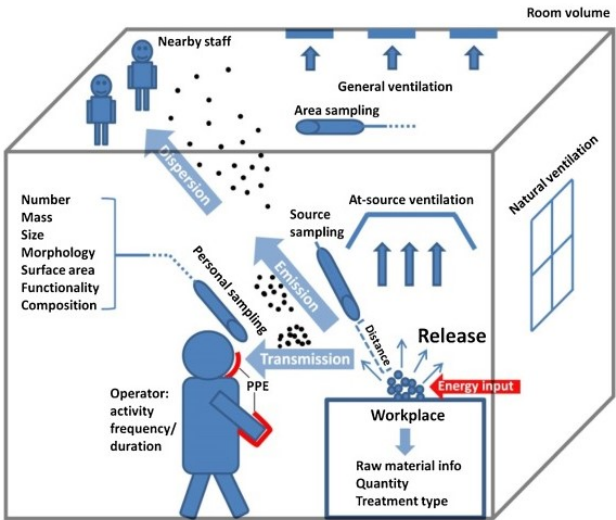


Fig. 1. Diagram representing various elements and processes in an occupational exposure scenario.

Discussion

The discussion topic for this issue is: **Do you put signs up laboratories to indicate “Nano Lab”?**

If you do put signs up, what sign do you use? GHS? Or something else?



Reference

1. Ding, Y, Kuhlbusch, T, Togeren, V & Jimenez, A S 2017, 'Airborne engineered nanomaterials in the workplace—a review of release and worker exposure during nanomaterial production and handling processes', *J. of Haz. Mat.*, vol. 322, pp. 17-28.

Contributions

Our next newsletter will move back to general nanosafety topics. Please email your suggestion/contribution to [Xin](#), [Maria](#) or [Julie](#) by May 28, 2017 for inclusion.