

# VI International Congress Synesthesia, Science & Art

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**Area of the contribution:** Artistic / New Technologies and synesthesia

## The Nature of Nano – How can we sense a tiny little World

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### ABSTRACT

It is difficult to grasp nanosciences. There is something between wave and particle. On the one hand hard and precise like a stone, and on the other hand soft and vague like the fog. It is everywhere and at any time, but far too small to understand it. Molecules, nanoparticles or crystals can create complex structures [1], such as man-made architecture. We look at them through sophisticated microscopes. But what we see is not the reality, just an interpretation. The interplay of our receptors with the olfactory molecules defines how we smell [2]. And the colours we see originate from colour pigments or can only be faked by means of a nanostructure [3]. Our sensation are caused by nanoscale quantum processes. So how can we represent this tiny world with our senses?

We want to discuss how to visualize nanoscale objects and processes through art. We need to serve all our senses to understand this tiny little world. Because in this world, all sensory impressions have their origin in physical and chemical processes. And all the senses are interwoven.



Inspired by an image from transmission electron microscopy  
Painting by Raewyn Truner (2017)

**Keywords:** nanoscience, fine arts, perception, imagination, cross-linked senses

### Brief biography

[1] M. J. Yacamán, J. A. Ascencio, H. B. Liuand and J. Gardea-Torresdey: “*Structure shape and stability of nanometric sized particles*”, Journal of Vacuum Science & Technology B (19), 1091 – 1103, 2001.

[2] S. E. Stitzel, M. J. Aernecke and D. R. Walt: “*Artificial Noses*”, Annual Review of Biomedical Engineering (13), 1 – 25, 2011.

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[3] H. Wang and K.-Q. Zhang: "*Photonic Crystal Structures with Tunable Structure Color as Colorimetric Sensors*", *Sensors* (13), 4192 – 4213, 2013.