



Eelco Kuijpers

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Bio sketch

Eelco Kuijpers PhD (M) is a senior scientist at the Netherlands Organisation for Applied Scientific Research {TNO} with main fields of interest on exposure assessment in the context of risk assessment and risk management, epidemiology, exposome studies and sensor applications. He is involved/coordinates studies related to sensor applications and exposome research, and is instrumental in establishing the international collaboration for occupational exposome and sensing together with NIOSH (USA) and HSE (UK). Eelco has ~30 peer-reviewed publications in this research domain.

“Smart sensors for a healthy and safe working environment”

Occupational diseases are a huge burden on society. Despite significant control efforts, yearly thousands of (former) workers die from occupational exposures and even more are injured or suffer from health effects. To further prevent occupational diseases, we need a way to monitor our working environment more continuously and in (near) real-time.

Until now, the prevention of occupational diseases has largely involved the use of traditional measuring methods. Generally speaking, readings are taken only a few times a year and results become available long after the exposures occur. New technologies, like sensors and new types of models, offer new solutions.

That is why we at TNO have launched a Virtual Occupational Hygiene Assistant, or VOHA for short. This digital support tool measures the quantity of certain chemical substances, the amount of noise, and other aspects. It automatically analyses the information and gives feedback to various relevant end-users. Our vision for the future is that monitoring will be continuous, with the help of sensors integrated on work clothing, helmets, and equipment.

In this presentation I look back at 10 years of research on sensors at the workplace. How we started with evaluating the value of these low-cost sensors, how we collaborate scientifically to generate guidelines for the right use of these sensors and how we move to implementation research with the end-users playing a central role in the development of solutions.