

# **Implantable Sensors: Safety and Efficiency**

*Paddy French*

**EI-EWI/DIMES, TU Delft**

Increasingly implantable sensors are being used for short and long term monitoring. For the patient this can mean continuous monitoring and transmission without the patient being affected. To achieve this goal there are many challenges. The dimensions of the system may be extremely limited, depending on the application. We need to maintain biocompatibility, so that the device does not damage the patient, and also that the patient's body does not damage the device. We also need to power the devices. A battery is not always an option and therefore EM powering, or energy scavenging have to be considered. If these challenges can be met, there can be great benefits to the patient, both in terms of patient comfort and efficiency of the measurements. These types of measurements can detect potential complication much faster and transmit the information to the medical staff. This paper will discuss the opportunities, the issues and the measures to address them. Also examples will be given of implantable devices.