**Transcript**

***Dr Michelle Spencer – Nanomaterials for electronic devices, sensors and batteries***

So our research involves determining how nanomaterials which are very tiny structures measured at the nanoscale can be used to improve our current technologies. The technologies we’re interested in include electronic devices, sensors and batteries. All of which are found in our everyday lives for example in mobile phones, computers and sensors for detecting dangerous gas emissions from cars and factories.

The key outcome we hope to achieve from our research is to improve the performance and operation of different devices through the incorporation of nanomaterials. So one specific example is our investigation of nanoscale layers of silicone which are known as silicon nanosheets and how they can be used to reduce the size of electronic devices. And the advantage of using nanoscale silicon as opposed to other nanoscale materials is that our current semiconductor technology is already set up for silicone. So, if we can make use of existing mass manufacturing techniques and processes then that’s an advantage. Another example of our current research focus is the development of better gas sensors for detecting greenhouse gases as well as other harmful and toxic molecules that may be present in the environment. And our focus here is on zinc-oxide nanostructures which have shown great promise for sensing and detecting a wide variety of molecules that may have an adverse effect on our health.

So the outcomes from our research we hope will lead to the development of faster, smaller and more efficient electronic devices and sensors that will contribute to the advancement of our current technologies as well as improve our health and safety.