An electronic sensor that has the ability to distinguish between sharp and blunt objects. The novel approach we have employed uses nanowires of different lengths that give varying electronic responses when pressurised. Applications include a range of wearable sensors.

- Distinguishes between blunt and sharp objects
- Flexible
- Strain insensitive
- Multiple design options

THE TECHNOLOGY
A number of new designs have been developed that can produce a suitable response in wearable sensor applications, as shown in Figures 1 and 2.

Nanowires are grown on a stretchable Eco-Flex substrate. The Eco-Flex is functionalised with APTMS and soaked in a solution with excess gold nanoparticles. The nanowires are grown through an interaction of a ligand, HAuCl₄ and an acid.

Figure 1 shows nanowires of six different lengths that are grown on an Eco-Flex substrate. The various lengths are produced by sequentially masking the subsequent regions.

A variation on this design is shown in Figure 2 where a circular disc sensor is used in a concentric layout.

INTELLECTUAL PROPERTY: This technology is protected by Australian provisional patent AU20189022448.

THE OPPORTUNITY
Monash seeks a partner to assist in the commercialisation of this technology. Prof Wenlong Cheng who is a world leader in the development of nanowire technology heads the Monash research team responsible for this technology.