

## Enhancing Personal Protective Equipment



UNIVERSITY of  
BRADFORD

### Face Visors

The first project involved design and precision mass production of face visors in conjunction with Leeds company ActiveCell Ltd (who were making 3D printed visors). The Polymer IRC team developed an injection mouldable solution. This offers significant advantages over 3D printing, with better surface finishes for skin contact; significantly improved process repeatability; better geometric accuracy; significantly higher volume production rates; and lower cost.

The final design was created, based on successful candidate 3D printed designs, but with key enhancement: low cost; compatibility with regulatory frameworks for optical safety devices; improved comfort; hooks for surgical masks to relieve ear pressure; and the ability to quickly and easily be completely disassembled into its component parts to enable sterilisation for either reuse or recycling. This is a key feature, as many of the existing devices used in the NHS use expandable foams and adhesives to join components which, while cheap, cannot be sterilised, so all visors must be incinerated after use. The Bradford visor is also designed for use in workplaces as people return to work, so a recyclable option will dramatically reduce the requirement for incineration and the volume of material for landfill. In addition, the device can be supplied as a flat pack solution that can be quickly assembled, which requires much less storage space than existing solutions.

In 5 weeks the team moved from design and prototype to full production. The device is now approved by a PPE test centre. We produce up to 4800 devices per day and manufacture of an initial order of a batch of 30,000 components is underway. CE marking has just been completed and further orders of 400 000+ devices are in negotiation.

The team is led by Professor Ben Whiteside and Professor Tim Gough, with Glen Thompson, Michael Hebda, John Bolton and David Barker.

Initial press releases:

<https://www.yorkshirepost.co.uk/health/coronavirus/yorkshire-university-makes-thousands-face-shields-nhs-2856507>;

[https://www.thetelegraphandargus.co.uk/news/18463623.university-bradford-engineers-team-make-visors/?ref=rss&utm\\_source=dlvr.it&utm\\_medium=twitter](https://www.thetelegraphandargus.co.uk/news/18463623.university-bradford-engineers-team-make-visors/?ref=rss&utm_source=dlvr.it&utm_medium=twitter)

