

BioPrinting: 3D Printing Parts for Bodies

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As an additive fabrication tool, 3D printing has provided a means to integrate highly active materials with structural supports and indeed with electronic materials. The electronic materials provide a communication pathway between wearable/implantable devices and monitors as well as controllers. Coupled with the fact that 3D printing provides a means to personalise wearables or implants, this means we are witnessing an extraordinary impact on the field of medical bionics.

In the field of wearable devices, monitoring and/or controlling human movement or physiology provides benefits for sports training and rehabilitation. Here we will show how 3D printing has facilitated the development of a knee sleeve and the bionic bra.

In the field of implantable devices structural support in the form of wearable or implantable prosthetics can be personalised using 3D printing. The inclusion of bioactive entities within the 3D structure provides a means of facilitating regenerative processes to repair damaged tissue. In our work we are in pursuit of 3D printed implants to facilitate cartilage, nerve and muscle regeneration.