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Development of Soft 3D Printing Materials for Textile Applications

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Abstract : Recently, 3D printing becomes popular process for manufacturing, especially has special attention in textile applications. However, there are various types of 3D printing materials, including plastic, resin, rubber, ceramics, gold, platinum, silver, iron, titanium but not all these materials are suitable for textile application. Generally speaking, 3D printing of textile mainly uses thermoplastic polymers such as acrylonitrile butadiene styrene (ABS), polylactide (PLA), polycaprolactone (PCL), thermoplastic polyurethane (TPU), polyethylene terephthalate glycol-modified (PETG), polystyrene (PS), polypropylene (PP). Due to the characteristics of the polymers, 3D printed textiles usually have low air permeability and poor comfortable. Therefore, in this paper, we will review the possible materials suitable for textile application with desired physical and mechanical properties.

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