Formulation for 3D Printing

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The industrial uptake of Additive Manufacturing and 3D printing processes is growing rapidly but is being hampered by the lack of breadth of materials usable in such systems. Identifying, and then optimisating formulations for 3D printing is time consuming, and generally involves many tedious steps each of which require lengthy analysis.

We have developed a methodology that compresses and automates the formulation steps. In addition we incorporate assays that assess final material and product characteristics, such that screening can occur at all steps of the manufacturing workflow.

We demonstrate how this is possible for a biomedical application, showing how suitable choice of high throughput and fast assay methods can reduce the time for formulation of a 3D printed resin by a factor of 15, raising the possibility of ‘dialling up’ materials ready for bespoke product manufacture.

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