Anti-infective Catheter Fabrication through Additive Manufacturing
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Background

- Catheter Associated Infections (CAIs) are the second major cause of death in haemodialysis patients and cause in increase in treatment cost.
- Conventional methods to tackle CAIs involve coated catheters, often coated with heparin, pyrogallol or silver nanoparticles. This creates additional manufacturing steps and requires a fine balance between coating thickness and sufficient release from the coating.
- 3D Printing is proposed as a method of creating patient specific catheters using drug loaded filaments with sustained release of drug.

Methods

- TC can be effectively combined with TPU to create filaments for FDM Printing
- Catheter constructs could be 3D printed with inhibitory effect on S. aureus bacteria
- Catheters exhibited sustained release for a period of over 10 days

Conclusions

- TC can be effectively combined with TPU to create filaments for FDM Printing
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References

3. Thompson, S et al., BMC Nephrol. 2017, 18, 357