

Research Profile

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| Name: | Dr Cristina Tuinea-Bobe |
| Position: | Senior Research & Knowledge Transfer Development Officer |
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**SUMMARY OF MY RELEVANT RESEARCH AREAS:**

Brief summary of your research areas, in English *just a short paragraph please*

Surface characterization, surface chemistry modification, surface structuring of polymers, material properties modification via processing, stretchable conductors, biomedical devices, ultrasound welding, implantable materials.

Brief summary of your research areas, in Chinese *we will translate this for non-Chinese speaking UK participants*

Primary Research interests: *A fuller description of your main research areas.*

Cristina works at the RKT Centre for Polymer Micro and Nano Technology and her main interest areas are:

- Development of bio-medical devices via injection moulding;
- Surface characterisation of different materials and components using: SEM, AFM, White Light Interferometry, Confocal Microscopy;
- Surface chemistry modification via plasma treatment or casting on different surfaces;
- Surface structuring of polymers via injection moulding or photolithographic methods;
- Material properties modification which are affected by different process parameters;
- Stretchable conductors;
- Thin film deposition onto polymers and elastomers;
- Ultrasound monitoring of injection process;
- Ultrasound welding;
- Knowledge transfer between the R&D Institutes and industry.

Topics in which you would like to develop collaborative research:

Please indicate here research areas for which you would like to find partners to undertake joint research.

- *Material properties modification and methods of identifying morphological modification via characterisation methods.*
- *Novel materials used for bio-medical devices.*
- *Surface chemistry change to increase adherence of different particles and thin films.*
- *Morphology and mechanical properties of doped polymers in microinjection moulding.*

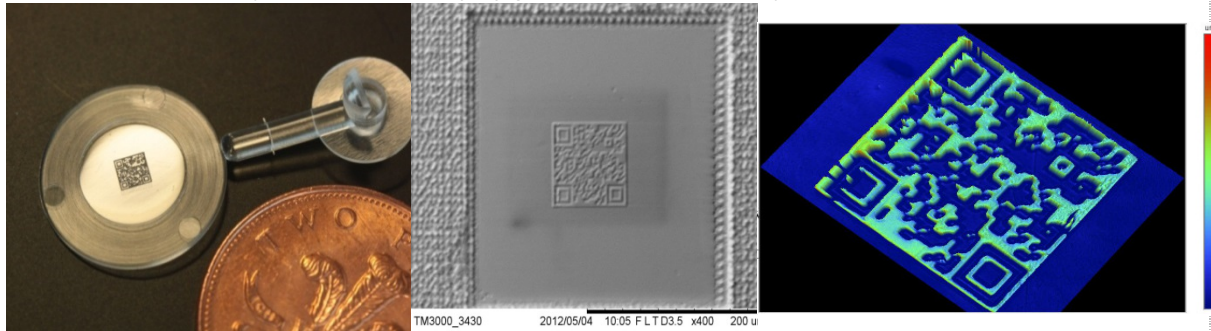
Relevant existing collaborations (academic/clinical/commercial) inside or outside China.

Include here any relevant collaborations you have

- Science Bridges China
- Nanofactory – ERDF UK Universities collaboration
- Bradford Industry Group
- Yorkshire and Humber based companies
- WARTHE Marie Curie Project
- MeDe Innovation

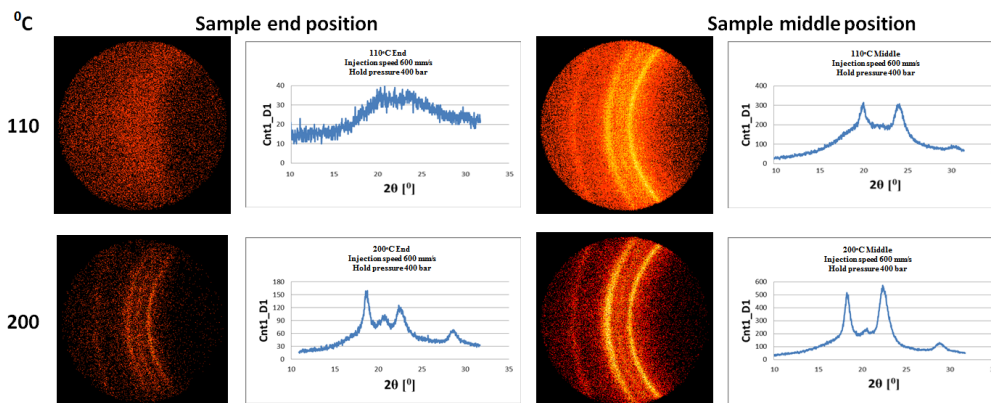
Relevant graphics, figures, pictures:

Use this area to show pictures or scientific figures which illustrate your research



QR code used for anti-counterfeit technology

Sample processed at 600mm/s injection speed and hold pressure 400bar



Two-dimensional XRD patterns of PEEK processed at 600 mm/s injection speed and hold pressure 400 bar

Publications and other outputs relevant to your interest in this programme (up to 5)

Please give references to your key recent research publications

1. Nair K., Whiteside B.R., Grant C., Patel R. and Tuinea-Bobe C. (2015): "Investigation of Plasma Treatment on Micro-Injection Moulded Microneedle for Drug Delivery" *Pharmaceutics*, MDPI, Basel, 7 471-485.
2. Y. Gao, X. Dong, L. Wang, G. Liu, X. Liu, C. Tuinea-Bobe, B. Whiteside, P. Coates, D. Wang, C. Han,(2015): "Flow-induced crystallization of long chain aliphatic polyamides under a complex flow field: Inverted anisotropic structure and formation mechanism" *Polymer*, 73 91-101.
3. Vella P.C., Dimov S.S., Brousseau E,Tuinea-Bobe C., Grant C. and Whiteside B.R. (2014): "A new process chain for producing bulk metallic glass replication masters with micro- and nano-scale features" *The International Journal of Advanced Manufacturing Technology* .
4. Tuinea-Bobe, C.L., Lemoine, P., Manzoor, M.U., Tweedie, M., D'Sa, R.A., Gehin, C., Wallace, E., Photolithographic structuring of stretchable conductors and sub-kPa pressure sensors, IOP publishing, *Journal of Micromechanics and Microengineering*, 21 (2011)
5. Manzoor, M.U., Tuinea-Bobe, C.L., McKavanagh, F., Byrne, C.P., Dixon, D., Maguire, P.D., Lemoine, P., Amorphous carbon interlayers for gold on elastomer stretchable conductors, IOP publishing, *Journal of Physics D: Applied Physics*, 44 (2011) 245301 (9pp)

