



<b>Position Title</b>	PhD Studentship - The development of smart 4-D materials utilising melt processed stimuli sensitive polymers
<b>Project Abstract</b>	<p>Imagine a world where current diseases could be easily treated, where patients underwent short treatment periods and recovered quickly with limited side effects. We are now entering a generation of smart medicine which will do just that. The proposed study represents uncharted territory for smart temperature sensitive polymers. The main aim of this study is to develop novel smart 4-D materials and analyse their behaviour and potential applications. There is more that can be done with 3-D printed materials to make them more flexible and more useful: by utilising structures (Smart Polymers) that can transform in a pre-programmed way in response to a stimulus. Very recently given the popular science name of “4-Dprinting”, it refers to 3-D printed objects that can transform their shape over time, thus giving them an extra dimension.</p> <p>While the use of smart materials is not new, the 3-D printing of smart polymers is very new, and 3-D printing of smart negative temperature sensitive polymers using Fused Deposition Modelling has not been reported in literature. Thus it marks an exciting new chapter in the evolution of smart thermosensitive polymer materials. When one thinks of the revolutionising materials properties brought about by melt processing conventional polymers, which have been used in many lifesaving applications in the biomedical field, the potential of this research is very far reaching indeed.</p>
<b>Experience</b>	The PhD position is funded for 4 years, including a monthly stipend and materials and travel budget. Applicants should hold a minimum of an honours bachelor’s degree at 2:1 level or equivalent in a relevant subject such as Polymer Science/Materials/Bioengineering. Candidates should also have a strong interest in 3-D Printing/Additive Manufacture.
<b>Funding</b>	The studentship will cover fees up to €5,500 pa and a stipend of €18,500 pa
<b>Location</b>	AIT
<b>Closing Date</b>	Friday 29 <sup>th</sup> June 2018
<b>For more information contact</b>	Dr. Luke Geever, lgeever@ait.ie

AMBER,  
CRANN Institute,  
Trinity College Dublin,  
Dublin 2, Ireland

T + 353 (0) 1 8963030  
W ambercentre.ie  
twitter @ambercentre

