



## Post Specification

<b>Post Title:</b>	<b>Research Fellow in Engineering</b> (Porous Structure, Capillary Wicking, Additive Manufacturing, Surface Engineering, Two-Phase Heat Transfer)
<b>Post Status:</b>	Specific Purpose Contract (up to 24 months) - Full-time
<b>Location:</b>	Dept. Mechanical, Manufacturing & Biomedical Engineering, Parsons Building, the University of Dublin, Trinity College Dublin, Dublin 2, Ireland
<b>Reports to:</b>	Asst. Prof. Dr. Michael Gibbons (Principal Investigator)
<b>Salary:</b>	€48,671 - €51,313 per annum
<b>Hours of Work:</b>	37.5 hours per week (9:00 – 17:00, Mon - Fri.)
<b>Closing Date:</b>	7 <sup>th</sup> July 2024, 11:59 pm or until the position is filled.
<b>Anticipated Start Date:</b>	1 <sup>st</sup> September/October 2024

## Post Summary

The Thermal Fluids and Energy research group at the University of Dublin, Trinity College, is seeking to recruit a postdoctoral researcher to develop hierarchical porous capillary wicking structures using additive manufacturing and nanostructuring for two-phase heat transfer and heat pipe applications. Potential fabrication techniques include 3D metal printing, electrodeposition, laser texturing, and other relevant porous structure development techniques. Nanostructuring and surface engineering will be implemented to augment porous media wettability. The developed porous wicking structure will be incorporated into a loop heat pipe and two-phase mechanically pumped loop device. Condensation, passive fluid transport and water harvesting applications will also be considered where suitable.

**Full posting** - [https://www.gibbonslab.com/s/TFE\\_RF\\_02\\_Porous-structure-additive-manufacturing-for-two-phase-heat-transfer.pdf](https://www.gibbonslab.com/s/TFE_RF_02_Porous-structure-additive-manufacturing-for-two-phase-heat-transfer.pdf)

### **Preferred Qualifications**

- PhD in Mechanical Engineering, Material Science, Chemical Engineering, Chemistry or related discipline.
- Experience in the fabrication of porous structures and enhanced wetting surfaces using additive manufacturing (3D metal printing, electrodeposition or similar) and surface engineering (laser texturing, nanostructuring).
- Experience with surface wettability and multiscale hierarchical structures.
- Experience in two-phase heat transfer.
- Surface and Material characterisation expertise. Techniques include focused ion beam (FIB), scanning electron microscope (SEM), white light interferometry, contact angle meter, rate of rise, boiling and condensation surface characterisation.

### **Application Procedure:**

Interested candidates should email Prof. Michael Gibbons ([gibbonm3@tcd.ie](mailto:gibbonm3@tcd.ie)) their CVs and lists of three references. Please include "TFE\_RF\_02" in the subject line of the email application.

**Group Information** - <https://www.gibbonslab.com/>