

# Microbial Induced Electrochemistry at the Local Site and Single Cell Level

## 3.5 year PhD Position available Oct 2024

Microbial induced corrosion via local electrochemical processes initiated by bacteria is a serious economic problem that costs an estimated \$113 Bn p.a worldwide.

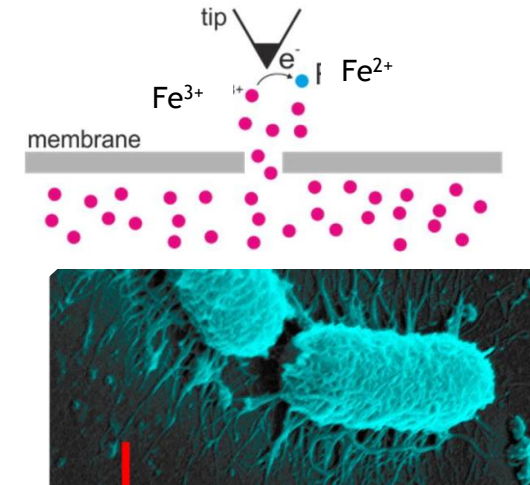
Local electrochemical processes drive such corrosion via direct metal-to-bioorganism charge transfer, electron shuttle phenomena, or electrochemical processes mediated by chemicals produced by bacteria. The project will adopt a combined surface spectroscopy, scanning probe microscopy, local electrochemistry and bio-imaging approach to understand the origin and mechanism of microbial corrosion.

The PhD will include:

- interdisciplinary science
- advanced nano-fabrication, nano-imaging and spectroscopic techniques

The student will register at the University of Liverpool and enrol in NBIC's Doctoral Training Centre which trains inter-disciplinary PhD researchers at the Interface of Physical and Life Sciences.

- Provide high level training and mentorship in research and entrepreneurship
- Join a National Network of leading Research Groups in the UK
- Join a community of leading companies in the UK



*Combining advanced fabrication and probing techniques to track electrochemistry at the local level.*

### *Supervisory team:*

*Professor R Raval,  
Dr A Vezzoli,  
Department of Chemistry, University of  
Liverpool.*

*Professor Pat Unwin  
Department of Chemistry, University of  
Warwick.*