

CIRRICULUM VITAE

Tony Cook

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EDUCATION

- 2004** **PhD:** Corrosion Science and Engineering, University of Manchester Institute of Science and Engineering (UMIST); “Mechanistic Aspects of the Dissolution of Pure Aluminium in Alkaline Lithium-Salt Solution” supervisors Professor Roger Newman and Dr. Henry Holroyd
- 1998** **MSc:** Corrosion Science and Engineering, UMIST (Departmental Prize Winner)
- 1997** **MPhil:** “The Oxidation of Brine Mediated by Aqueous Powder Dispersions of Ruthenium Dioxide Hydrate” supervised by Professor Andrew Mills Swansea University

EMPLOYMENT

- 2015 - 2026** **Research Fellow;** The University of Manchester
- 2018 - 2021** **Visiting Researcher;** Imperial College London
- 2006 - 2015** **Post-Doctoral Research Associate (PDRA);** The University of Manchester
- 2002 -2006** **Research Scientist;** Industrial Research Limited, Parnell, Auckland, New Zealand

TECHNICAL EXPERTISE

- Electrochemical Methods for the study of uniform and localized corrosion and associated EAC in ferrous materials, including austenitic and precipitation hardened stainless steels.
- Physical Methods for elucidating localized corrosion chemistry (XANES, XRD, FTIR)
- Using Digital Image Correlation for monitoring atmospheric chloride-induced SCC
- Determination of hydrogen uptake and trapping in corrosion resistant alloys such as 718 and 625
- Scanning Kelvin Probe Force Microscopy for microscale resolution of corrosion potentials’

Research Projects

- “Assessing New Cement Formulations for Encapsulation of Nuclear Waste Material’s” (2025 - 2026)
- “Assessing the Effects of Ageing Temperature on Localised Corrosion and SCC in precipitation hardened stainless steels” (2022 - 2025)
- “Kinetics and Mechanism of Localised Corrosion in CO₂-Containing Brines” - project split between Manchester and Imperial (2018 - 2021)

- *“New Materials for High Pressure High Temperature Applications”*, ICAM 04, (2016 -2018)
- *“Advanced Material Challenges at 20k; Hydrogen Assisted Cracking in Nickel Based Alloys”*, ICAM 13 (2014 - 2016)
- *“In-situ Stress Corrosion Cracking in Vapour Phase”* (2012 -2013)
- *“Development of Atmospheric Stress Corrosion Cracks in Magnox Waste Storage Cans”* (2011 - 2012)
- *“Elucidating Sweet/Sour Corrosion Scales for Oilfield Applications”* (2011 - 2012)
- *“Decommissioning, Immobilisation and Management of Nuclear Wastes for Disposal (DIAMOND) – Performance and Condition Monitoring of Steel Waste Container Materials towards Localised Corrosion and EAC”* (2009 - 2011)
- *“Keeping the Nuclear Option Open (KNOO) “Atmospheric Stress Corrosion Cracking of Austenitic Stainless Steel”* (2006 - 2009)
- Various projects at Industrial Research Limited, Auckland, NZ performed as part of the Nano-Technology Platform Multi-Scale Modelling Program: funded via New Zealand Foundation for Research Science and Technology under contract no. C08X0409 (2002 -2006), including:
 - “Corrosion Protection of Mild Steel with Variously Doped Polyaniline”*
 - “Pit Growth in Pure Aluminium – Stability Criteria for Sustained Dissolution”*
 - “Formation of Protective Hydrotalcite Scales on Pure Aluminium during Exposure to Alkaline Lithium-containing Salt Solutions”*

Publication Activities

- 30 peer reviewed papers in localized corrosion, EAC and corrosion inhibition (this includes both journal and conference contributions); H-index 14
- Numerous conference presentations (3 invited) on localized corrosion processes, corrosion inhibition and chloride-induced atmospheric SCC

Memberships

- Member of Institute of Corrosion (Icorr)
- Committee member Corrosion Science Division of Icorr since 2012

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Tony Cook