DR MICHAEL TYNAN
MChem, PhD

Scientist/Fire Investigator

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Michael completed his PhD in Chemistry at the University of Durham before beginning his career as a Process Scientist in the water industry. He later joined Burgoynes, a London-based scientific consultancy, working as a Fire and Explosion Investigator. In 2025, he joined Brookes Bell as a Cargo Scientist and Fire Investigator.

Michael's PhD research focused on the synthesis of carbon nanomaterials using novel chemical vapour deposition techniques on metal catalysts. Through this work, he developed expertise in SEM, TEM, EDX, Raman spectroscopy, UV-vis spectroscopy, BET, and ICP analysis. His research was published in Nanoscale.

In the water industry, Michael investigated water quality incidents and process failures, determining root causes and implementing corrective measures. These incidents included bacterial, metal, and pesticide contamination, as well as failures on chlorine dosing systems and filtration processes.

At Burgoynes, Michael investigated over 100 fires and explosions at domestic and commercial premises. These incidents involved fires causes by human agency, deliberate or otherwise, as well as latent defects in electrical appliances, electrical distribution equipment, hot works, and lithium-ion batteries. His investigations were primarily carried out for insurance purposes, and he provided expert advice to loss adjusters, lawyers and insurers.

Academic Qualifications

PhD in Chemistry, University of Durham
Thesis: 'Templated Synthesis of Graphene'

M.Chem (Hons) in Chemistry, University of Durham

Previous Employment

Burgoynes - Fire and Explosion Investigator

Thames Water - Technical Process Lead

Southern Water - Senior Process Scientist

Scientific and Consultancy Experience

- Experienced in the investigations of domestic and commercial fires and liability claims.
- Investigation of personal injuries.
- Investigated fires and explosions involving:
  - Hot work
  - Accidental human agency
  - Deliberate human agency
  - Leaks of flammable gases
  - Electrical faults in household appliances
  - Electrical distribution equipment
  - Self-heating
  - Lithium-ion batteries
  - Vehicles
- Investigated water quality incidents such as:
  - Bacteriological contamination
  - Metal contamination
  - High pesticide levels
  - Excessive chlorine demand
  - High turbidity
  - Phosphoric acid contamination

Publications

Tynan, M., Johnson, D., Dobson, B., & Coleman, K. (2016). Formation of 3D Graphene Foams on Soft Templated Metal Monoliths. Nanoscale, 8(27), 13303-13310.