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### The F-factor: Force microscopy in food research

How does nanoscience and nanotechnology impact food? The nano world is inhabited by particulate nanomaterials with characteristic dimensions in the range of 1-100 nm. In foods this length scale embodies the molecular structures in raw materials and the molecular additives and ingredients introduced to generate function. The application of force microscopy to probe how such structures dictate functionality will be illustrated with examples ranging from the biosynthesis and enzymatic breakdown of starch, how structures dictate emergent properties of polysaccharides and interfacial protein films, and the potential for bioactivity of dietary carbohydrates. In addition, new methods for studying the force interactions which govern the stability of the soft matter systems found in complex multiphase foods will be presented.

### Biography

A Patrick Gunning has completed his PhD from Glyndwr University, UK. He is the Manager of the Atomic Force Microscopy Facility at the Institute of Food Research (IFR), a public funded research institute. He has published more than 90 papers in reputed journals and has been serving as a member of the Scanning Probe Microscopy Section Committee of the Royal Microscopical Society.

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