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Neutrons and Food - an Introduction

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The application of neutron scattering methods to understand the structure and dynamics in soft-condensed matter has a long history but its utilisation for food-based materials still remains the domain of a small, albeit increasing, community. This is despite the fact that neutrons offer significant advantages over other avenues of characterisation where an understanding at the nanoscale is essential to explain the functional properties and behaviour in food. Neutrons are isotopically sensitive and are also highly penetrating enabling transmission through complex sample environments; the latter provides the potential to study industrially-relevant processes in real time. The presence of higher flux facilities, with access to extended spatial and energy ranges, greater computational power and enhanced modelling methods, offer further opportunities. This presentation will provide a brief introduction to neutron scattering and how such methods can yield useful information on food materials.

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