



## Calendar details

Date:	Tuesday, 2 March 2021
Time:	03:00 pm - 04:00 pm (Melbourne, Australia)
Event Registration:	<a href="https://www.eventbrite.com.au/e/australian-society-of-rheology-industry-lecture-2-march-2021-registration-133169151517">https://www.eventbrite.com.au/e/australian-society-of-rheology-industry-lecture-2-march-2021-registration-133169151517</a>

## Invited lecture

<p><b>Speaker: Graeme Gillies (Organisation: Fonterra)</b></p> <p><b>Presentation Title: A constitutive model for predicting the rheological behaviour of cheese</b></p>
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**Abstract:** Over the years there have been many reports of the rheological properties of cheese. However the interpretation of rheological data is inconsistent, and limited by qualitative discussion or models that are narrow in their application. By treating proteins and insoluble calcium phosphate as attractive core shell nano-particles interacting via a generic interaction potential a self-consistent mathematical model can be created. It will be shown that very few fit parameters are required to generate a meaningful model that captures a wide range of material properties and functional properties of cow's milk cheeses. In particular the transition of medium to hard cheese represents a gel - glass transition while the melting of cheese is shown to be a gradual release from quenched phase separation process. Both the model and the essential fit parameters are easy to appreciate by those without any modelling background.

**Speaker Biography:** Graeme Gillies is a principal research scientist at Fonterra. His work is predominately modelling the non-microbial shelf life of dairy products. Graeme completed his PhD at UniSA under Clive Prestidge in 2003 specialising in colloid probe AFM. He then did post-docs working with H-J Butt in Mainz Germany, M. Borkovec Geneva Switzerland and A. Stradner Fribourg Switzerland. In 2011 Graeme moved to New Zealand to work in the dairy industry. He was largely involved in Fonterra's "Transforming the Dairy Value Chain" Primary Growth Partnership with the Ministry of Primary Industries that resulted in the expansion of Fonterra's Clondeboy site. The specific nature of his work is broadly colloid science and ion speciation, the fundamental nature of this work means he occasionally supervises PhD students.

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