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**SIMPLE MODELS FOR CLEANING 2: DIFFUSION-REACTION  
BEHAVIOUR IN THE CLEANING OF MODEL FOOD DEPOSITS**

G.K. Christian & P.J. Fryer

*Centre for Formulation Engineering, Chemical Engineering, University of Birmingham*

**ABSTRACT**

Cleaning of milk deposits is by combination of the application of cleaning chemical and the shear provided by flow. Experiments have been conducted in which pulses of cleaning chemical have been passed over a fouled surface, and the heat recovery studied using a heat flux sensor. Results show that different lengths of sodium hydroxide pulse remove different amounts of the deposit. A simple model can be built for this in terms of the rate of diffusion of chemical into the surface, if it assumed that the effect of chemical is to lower the cohesive strength of the deposit to enable removal to take place by fluid shear. This model can be used to make predictions about the cleaning of extended surfaces and pipework.