

#22

DEPOSITION OF ELECTRODE SURFACES DURING THERMAL PROCESSING OF MILK IN AN OHMIC HEATER

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ABSTRACT

Whey proteins result in significant fouling during thermal processing of milk and β -lactoglobulin (β -lg) is one of the most heat sensitive whey protein. Both denatured (or unfolded) and aggregated forms of β -lg cause deposition, however, findings reported in literature are not conclusive as to which form causes more fouling. While some studies have suggested only aggregated protein being responsible for fouling, a few others have postulated that the formation of aggregated proteins in fact lowers fouling.

In the current study we have investigated skim milk fouling. Experimental results and simulated results obtained from a mathematical model developed to analyze the fouling process show that denatured protein (intermediate form between native protein and aggregated protein) causes most of fouling. The formation of aggregated protein tends to result in less fouling.