

**THE IMPACT OF SMALL DIAMETER RESIN BEADS ON PROCESS  
KINETICS AND ECONOMICS IN THE SUGAR INDUSTRY – A CASE  
STUDY**

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**ABSTRACT**

This paper presents an investigation into the use of small bead ion-exchange resins to enhance the kinetics of colour removal in a sugar application. Significant improvements in ion-exchange kinetics were achieved by reducing the mean bead size and by changing other resin properties. The rate controlling processes were found to be a combination of film and particle diffusion. While the use of small bead resins will increase resin-bed pressure drops, the use of kinetically optimized resins should result in smaller and cheaper ion-exchange plants.