

https://dspace.org/

Flow Characterisation of An On-Line Electrochemical Analyser

Shaik, Mohammed Nadim

2006-11-14T08:16:46Z
http://hdl.handle.net/10539/1662

Downloaded from a DSpace repository. https://dspace.org/

ABSTRACT

The flow characteristics of an on-line analyser were measured using a stimulus – response technique. The analyser was developed for monitoring homogeneous catalyst concentrations in a non-aqueous solution and it was considered important to limit dispersion effects between sample injection and measuring points. Various tube lengths between these points were used and the system was operated over a range of flow rates. The detectors employed were electrochemical in nature and of two different designs.

The residence time distributions of the system were determined experimentally and analysed by the method of moments and frequency techniques. As expected dispersion of the sample decreased as tube length decreased and flow rate increased.

An attempt was made to fit the experimental results to the axially dispersed plug flow model. This was only successful over a limited range of the variables.