

## عنوان مقاله:

Studies on Droplet Size Distribution of Oil-in-Water Emulsion in SMX Static Mixer

## محل انتشار:

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## نویسندگان:

L Muruganandam - *Chemical Engineering Department, SCALE, VIT University, Vellore, TN 632014, India*

D Kunal - *Chemical Engineering Department, SCALE, VIT University, Vellore, TN 632014, India*

G. O Melwyn - *Chemical Engineering Department, SCALE, VIT University, Vellore, TN 632014, India*

## خلاصه مقاله:

Oil droplet size distribution of an emulsion produced by Sulzer Chemtech s static SMX static mixer under flow condition was experimentally studied and reported. The dispersed phase of vegetable oil-in-water (O/W) emulsion produced through static mixer by varying the concentration from 1 to 4 vol % oil in water, flowrate of dispersed and continuous phase and operating time. The effect of run time on oil drop sizes is characterized using the spectra obtained from the particle size analyser. The static mixer with 9 perpendicular elements made of teflon is stacked against each other had a void fraction of 0.93. The sauter mean diameter of oil droplet decreases from 8  $\mu\text{m}$  to 4  $\mu\text{m}$  with an increase in Reynolds number. The emulsion droplets of mean sauter diameter in the range 4.1  $\mu\text{m}$  to 4.7  $\mu\text{m}$  were produced by increasing the concentration of the dispersed phase from 1:100 to 1:25, within a span value of between 30 to 240 sec, at atmospheric pressure and room temperature. Performance equation for sauter mean oil droplet diameter is developed based on the experimental data has  $\pm 0.2$  rms deviation.

## کلمات کلیدی:

SMX Static mixer; Dispersed phase; Emulsion; Sauter mean oil droplet

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/719860>

