

**Thermodynamics and Reaction Engineering Laboratory, 6th Semester, Chemical  
Engineering Session - spring 2020.**

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Experiment No. 1: Standardization of the given solution of NaOH.

[https://www.youtube.com/watch?v=J8gDdy6y\\_j8](https://www.youtube.com/watch?v=J8gDdy6y_j8)

Experiment No. 2: Plug flow reactor

Aim: To determine the second order reaction rate constant for saponification reaction between NaOH and ethyl acetate in a plug flow reactor

<https://www.youtube.com/watch?v=Aj-SUHGeUg>

Experiment No. 3: RTD study in CSTR and PBR

Aim: (a) To plot the RTD curve for a CSTR and PBR using a pulse tracer

(b) To determine the dispersion number

: <https://www.youtube.com/watch?v=wTORleufY78>

Experiment No. 4: Isothermal batch reactor

Aim: To determine the pseudo first order reaction rate constant for the saponification reaction between NaOH and  $\text{CH}_3\text{COOC}_2\text{H}_5$  in a constant volume adiabatic batch reactor

<https://www.youtube.com/watch?v=9CLknsrsjXQ>

Experiment No. 5: Adiabatic batch reactor

Aim: To determine the pseudo first order reaction rate constant for the saponification reaction between NaOH and  $\text{CH}_3\text{COOC}_2\text{H}_5$  in a constant volume adiabatic batch reactor

<https://www.youtube.com/watch?v=-cZwa2TXhY&t=79s>

Experiment No. 6: Continuous Stirred Tank Reactor (CSTR):

Aim: To study of a non-catalytic homogeneous second order liquid phase reaction in a CSTR under ambient conditions.

<https://www.youtube.com/watch?v=5bXuayoauCU>