Chemical Reaction Engineering I

Quiz 2

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QUESTION

For the following irreversible liquid phase reaction

$$A \rightarrow B$$

the reaction is first order in A with an activation energy of 20 kcal mol^{-1}. When pure A is fed into a CSTR under the following conditions: F_{A0} = 10 mol min^{-1}, C_{A0} = 2 mol dm^{-3} and T=350K, an exit conversion of 0.75 was obtained from the CSTR. If the same reaction is carried out in a PFR at T = 325K with the entering stream into the PFR is F_{A0} = 5 mol –min^{-1} and C_{A0} = 0.5 mol dm^{-3}, calculate the exit conversion from the PFR.

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