A First Course on Kinetics and Reaction Engineering

Activity 22.2

Continuing Activity 22.1, find the space time that maximizes the steady state outlet molar flow rate of B from the CSTR.

Using the space time found above, along with all other reactor parameters, as a base case, predict how a small increase in each operating parameter (inlet concentration of A, inlet concentration of B, inlet temperature, volumetric flow rate, coolant flow rate and inlet coolant temperature) will affect the conversion and the outlet flow rate of B. Then perform simulations to confirm or refute your predictions. If your prediction was wrong, make sure you can qualitatively explain the correct outcome.