Scheme-3 Reactor-2

Part-1, Case-1

tend = 6 sec
k1 = 100, k2 = 10

NBt/NAt = 1.44778

Exponent a = 1
Exponent b = 1
Exponent c = 0.5
Exponent d = 1.5

WA = 200
WB = 72.3889
NBt = 3.86074
Vt = 2.13619
Tot.Solv. = 2
SolA/(SolR+SolA) = 0.5

CA0 = 1.24833
CB0 = 1.8073

Total input = 272.389 kg
Total output = 272.39 kg

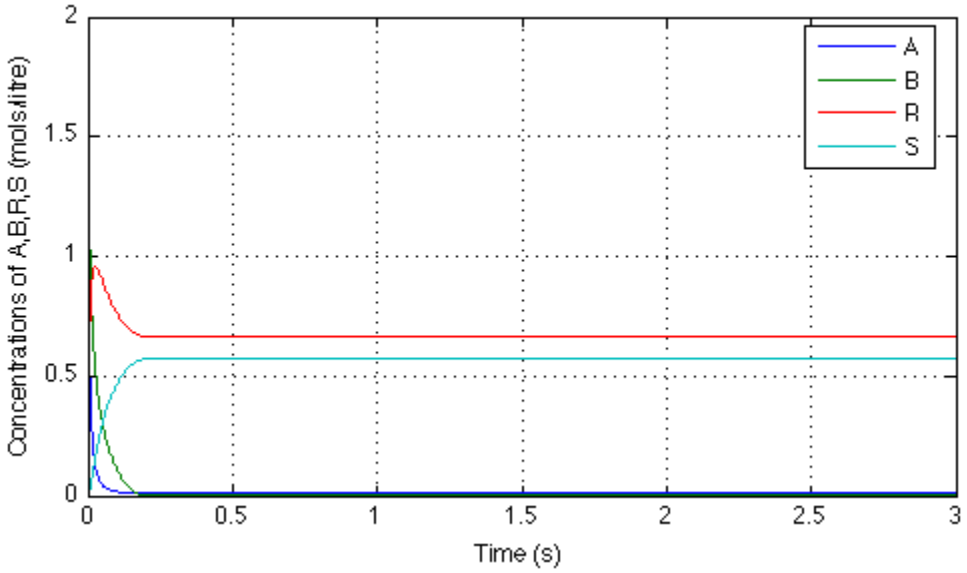
Chemical Balance Error = 0.00122078 kg (% 4.48174e-06)

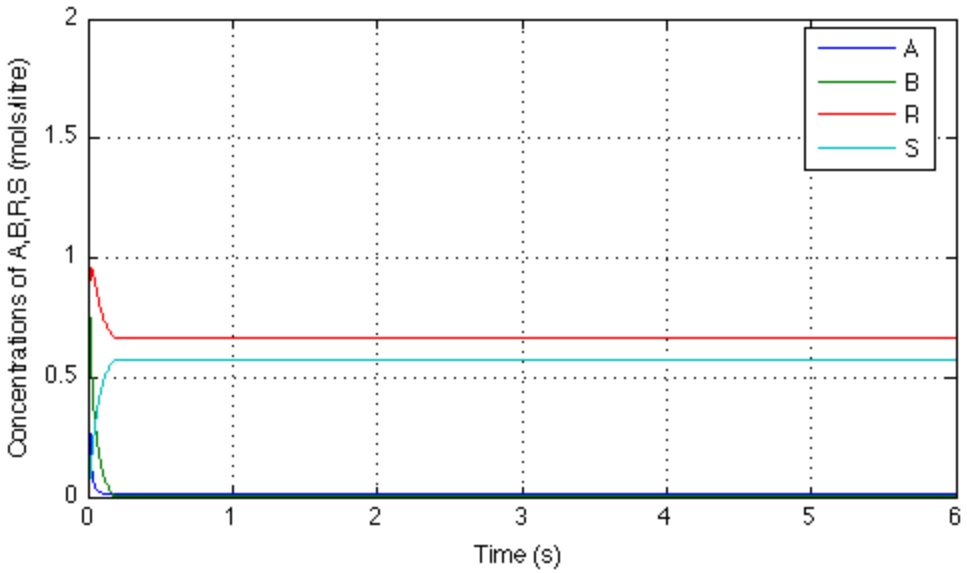
Solver: Explicit Runge-Kutta (4,5) Variable step (Dormand-Prince Pair)
Error tolerance: 0.1%

Final Concentrations with Step Size limited to 0.0001
CA (final) = 0.0125002
CB (final) = 1.29467e-08
CR (final) = 0.664353
CS (final) = 0.571472

CA @ 3.0s = 0.0125002
CB @ 3.0s = 2.75708e-08
CR @ 3.0s = 0.664353
CS @ 3.0s = 0.571472

Final Concentrations with Step Size limited to 0.001
CA (final) = 0.0124927
CB (final) = 7.00373e-07
CR (final) = 0.664369
CS (final) = 0.571464


Concentrations of A,B,R,S (mols/litre)
Time (s)
A
B
R
S
0
0.5
1
1.5
2
2.5
3


Concentrations of A,B,R,S (mols/litre)
Time (s)
A
B
R
S
0
0.5
1
1.5
2
3
4
5
6