

CH365 Chemical Engineering Thermodynamics

Capstone Design Project - IPR2 Guidance

IPR2 Guidance – due **26 October at 1630 hrs.**

- IPR1 comments are in SharePoint.
- Full calculation of Z_1 and Z_2 at (T_1, P_1) and (T_2, P_2) using the modified Soave-Redlich-Kwong (SRK) equation of state, equation 3.48 on page 99, where β and q are defined by equations 3.50 and 3.51 on page 99.
- I recommend that α and q be written as functions of x , where x is a dummy variable that acts as a place holder for T_r .

$$\alpha(x) = \left(1 + (0.48 + 1.574\omega - 0.176\omega^2)(1 - \sqrt{x}) \right)^2$$

$$q(x) = \frac{\Psi \alpha(x)}{\Omega x}$$

You do not really need to write α and q as functions of x do this for this IPR, but you will need to do it this way for IPR3. So doing this now will save you some work in the next phase of the project.

- Calculate Z_1 and Z_2 using CHEMCAD.
- The results for the four Z values are reported in your results table.
- Updated abstract
- Updated results table
- PDF, MMA and CHEMCAD files must be in SharePoint.
- 30 points (25 tech, 5 writing).