# Saturated and Superheated Properties of Heptane- User Manual

We provide you the MATLAB functions to deduce the intensive properties of Heptane in the superheated and Saturated region by giving two independent state properties as the input.

- ➢ You can provide either pressure (p) and volume (v) or specific entropy (s) and volume (v) as inputs to get other intensive properties [pressure (p), volume (v), temperature (T), mass specific internal energy (u), mass specific enthalpy (h), mass specific entropy (s), and the vapor fraction (x)] of the substance at that particular state.

- ➢ To get the above mentioned intensive properties, follow the steps mentioned below.
    1. On your command window or on a new script file, run the function **'Main'**.
    2. An instruction will prompt on your command window, indicating the number corresponding to two different functions our program is made of.
    3. If you want to get the properties by giving p and v as input enter the number 1. If you want to get the properties by giving s and v as input enter the number 2.
    4. As per the choice you made above, provide the inputs (pv or sv) to get other properties.

- ➢ To run our code, you need to save 5 files to your system.
  (preferred location- C:\Users\your_name\Documents\MATLAB)

  IMPORTANT: The MATLAB codes and the MS Excel files are to be kept in the same folder.

    1. The compiled code(Main.m)
    2. SetProperties_heptane_PV code (SetProperties_heptane_PV.m)
    3. SetProperties_heptane_SV code (SetProperties_heptane_SV.m)
    4. The MS excel file containing the data for heptane (heptane.xlsx)
    5. The interpolation code (Interpolate.m)

- ➢ To avoid any errors while running the code, please save all the aforementioned four files in the same folder inside a directory.