STANDARD OPERATING PROCEDURE
CHNS ANALYZER/ ELEMENTAL ANALYZER

- First off all, check the filling materials inside the Combustion and Reduction tube and also check the gas pressure.
- Remove the earlier samples if any remaining in crousel.
- Provide the gases pressure of oxygen and helium to 2.4 bar & 1.5 bar respectively.
- Switch on the instrument by pressing the green switch.
- After 5 min initiate the software by double clicking the icon located on desktop.
- The flow rate in the display of TCD, O₂ and helium should be nearly 600, 0 and 650 ml/min respectively and pressure 1250.
- A message will pop-up regarding crousel, click OK and the check the box of crousel reset.
- Set the temperature of the combustion and reduction tube to 1150, 850°C respectively by Options → Settings → parameters → temperature.
- Do not disturb anything till the temperature should stabilize to 59.7°C.
- Run 5 initial Blank sample until the regarding are repeatable (difference in C,H,N,S area less than 100)

**Note:** The number of blank runs can be increased if the readings are not stabilize
Remember to keep the name of method as Blank.
- Run at least 2 **RunIn** by keeping sulfanilamide (10-15 mg) until the area readings are repeatable (remember to keep the name of method as **RunIn**).
- Run at least 5 **standards** by keeping sulfanilamide (10-15 mg) until the 5 % readings are repeatable (remember to keep the name of method as **standard**).
- Keep one blank in between the standards and samples.
- Now keep the **samples** in the respective crousel numbers (10-15 mg) by proper folding them (remember to keep the name of method as **samples**)

**Note:** Add WO₃ i.e. tungsten trioxide if the sample to be analyses contains any biomass in it.
- To initiate the analysis press green (i) signal over the screen and yes to message of auto analysis.
- The system is set in the sleep mode and it will itself bring the temperature down to 50°C once the analysis is over. Do not changes the sleep setting.
- Once the analysis is over, for data analysis purposes select the at least 3-5 standards samples rows for calibration purposes and the go.
  - Math → Factor → check mark the icon → yes
- Clean the ash-fingers before beginning another run.

**Note:** Equal ratio of samples and tungsten but write only wt. of sample which will be used to mention sample wt. in software