

Downstream

Refining Operations *Finishing Processes*

HYDROTREATING

- ✓ The products from the Crude Units and the feeds to other units contain some natural impurities, such as **sulfur** and **nitrogen** and other contaminants.
- ✓ Using the **Hydrotreating** process these impurities can be removed to reduce pollution when finished fuels (gasoline, diesel, fuel oils) are used.

HYDROFINISHING

- ✓ It is used to modify also other properties (i.e. aromatic content).
- ✓ Heavier oils, high in sulfur and nitrogen, have also to be treated before downstream catalytic conversion processes.
- ✓ Hydrotreating (Hydrodesulphurization & Hydrodenitrogenation) are catalytic processes using H_2 to perform a very mild hydrogenation of **S** and **N₂** in hydrocarbons.
- ✓ **S** and **N₂** are converted to **H₂S** and **NH₃**.