

Recap from previous lecture

- Catalyst deactivation steps and how people are overcoming that
- Contact processes :-
- First step :- Combustion of sulphur in the presence of air
- We choose air because first, it's cheaper and second , Nitrogen in air acts as a dilluent preventing temperatures to rise to high values.
- We use excess air for two reasons, first :- We want 100% conversion of SO₂ and second we want to limit the temperature inside the combustion chamber (Nitrogen in air acts as a dilluent).
- State of sulphur that we feed is Molten.
- The sulphur burners consists of obstructions known as baffles or secondary air inlets which improves mixing.
- Since at high temperatures Nitrogen reacts with oxygen to form nitrous oxide, its treatment is done in the burner itself.
- We can produce high pressure steam from heat/energy released from combustion
- Since besides sulphuric acid , steam is also produces, such plants are called CO-GENERATION PLANTS
- Ideal temperature in convertor :- Around 400 degrees Celsius.
- We require High conversion because SO₂ can go in atmosphere leading to acid rain.
- Integration of two absorption columns to convertor.
- For treatment of pollutants, we come across two types of technologies :-
- 1) End of pipe technology :- We allow generation of pollutants and at the end treat it
- 2) Pretreatment :- Treated from the beginning
- NO removal from burner is pre-treatment since in the burner it prevents it from generating
- For automobiles, NO_x removal is End-of-pipe technology (catalytic convertor)
- Dried air is used since any moisture in air can hinder the complete process
- Progress made : in terms of heat removal
- Availabilty of catalyst is also important
- In lead chamber process:- Nitrogen dioxide is produced from NaNO₃
- Pore size is important since more surface area better reaction
- V₂O₅ enters in molten state

