

Comparative Analysis

→ Thermal radiation

→ Steam intrusion initiative

Traditional cracking technology (Thermal radiation)

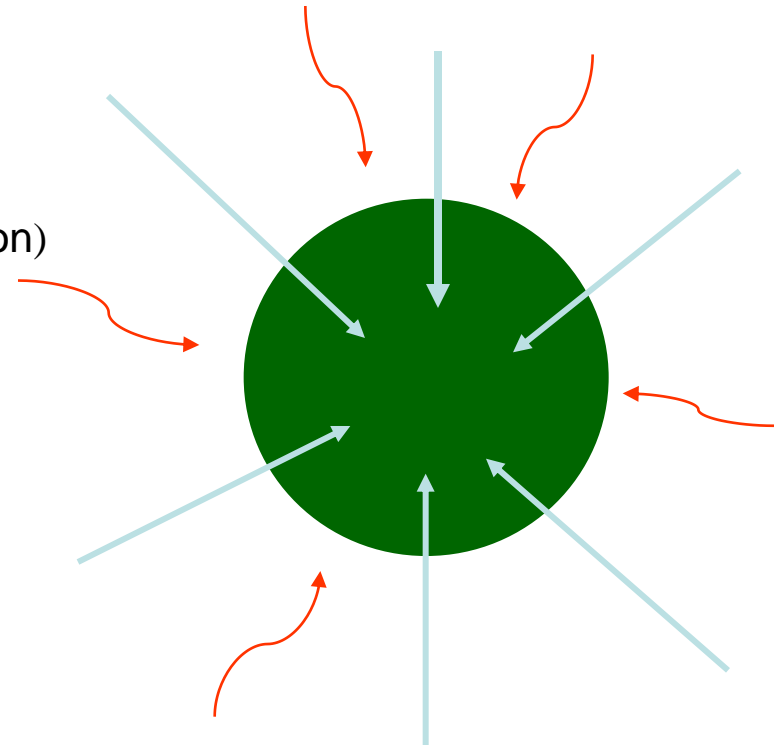
■ Disadvantages:

- Cracking (10 – 30min, 10cm² tire chips)
- Cracking incomplete
- Tar sand residue
- Low-quality carbon black and dirty oil
- Iodine absorption surface area small
- High vacuum required

APS technology (Thermal radiation and Steam)

■ Advantages:




- Complete cracking
- Less Tar sand produced than all other systems
- High surface area and good iodine absorption rate
- Oil w/o carbon dust and carbon black with high BET rating produced
- Cracking time (2 - 5min)
- Minimal vacuum required
- Leading edge safety systems incorporated



Comparative Analysis (Continued)

Traditional cracking technology





Reaction of oil and gas composition before condensing

-  Fuel Gas ($C_1 - C_4$), about 15% to 18%
-  H_2 , about 3.5%
-  Fuel Oil vapor ($C_5 - C_{40}$), 80%

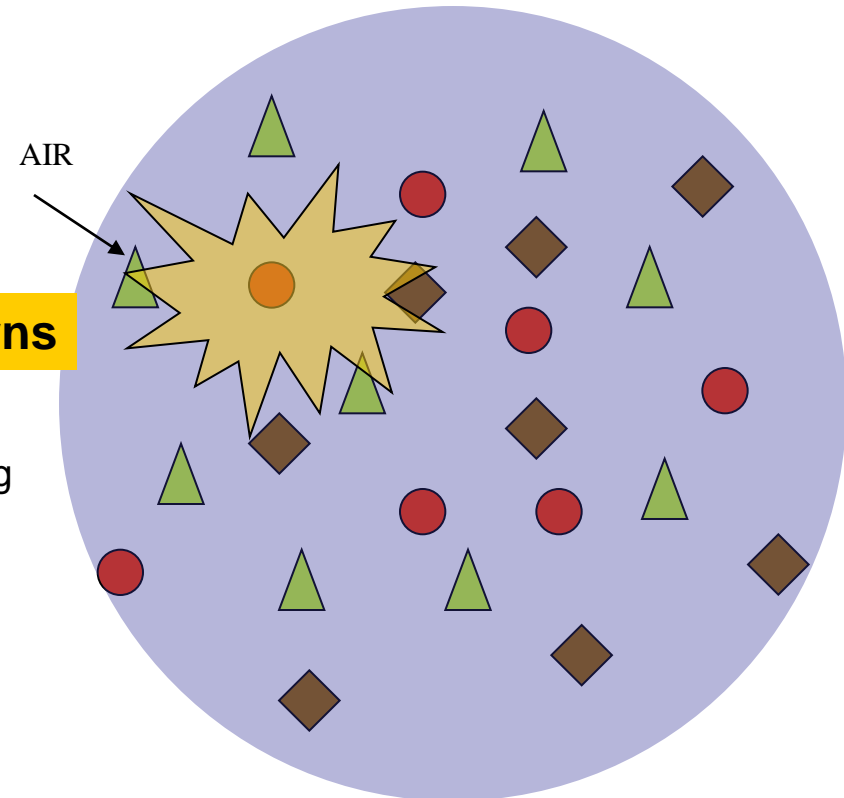
Must be high vacuum - explosion concerns

APS conversion technology

Reaction of oil and gas composition before condensing

-  Fuel Gas ($C_1 - C_4$), about 8% - 10%
-  H_2 , about 2%
-  Fuel Oil vapor ($C_5 - C_{22}$), 50%
-  Water Steam H_2O , up to 40%

Built in safety – No risk of combustion



Steam protection