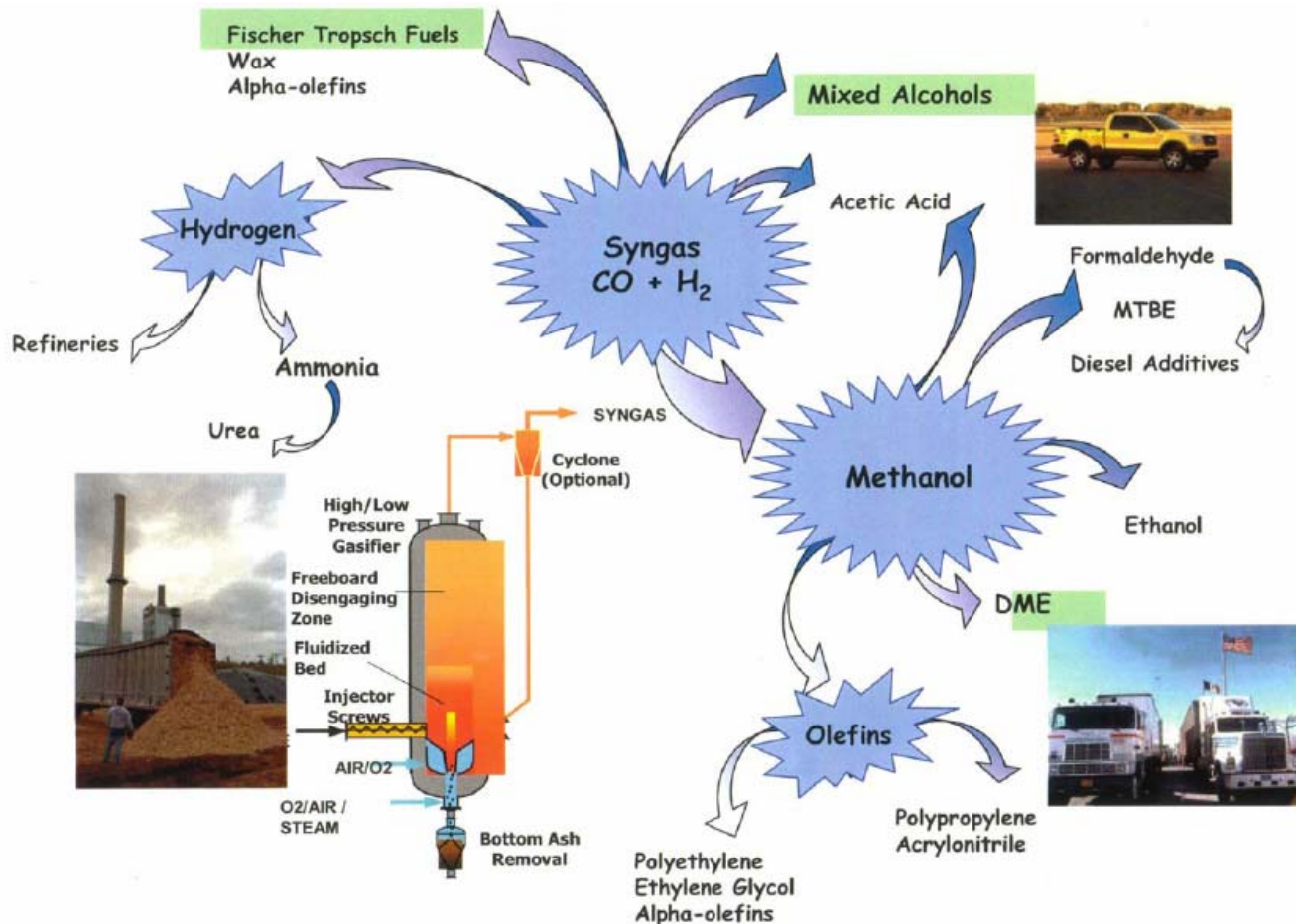
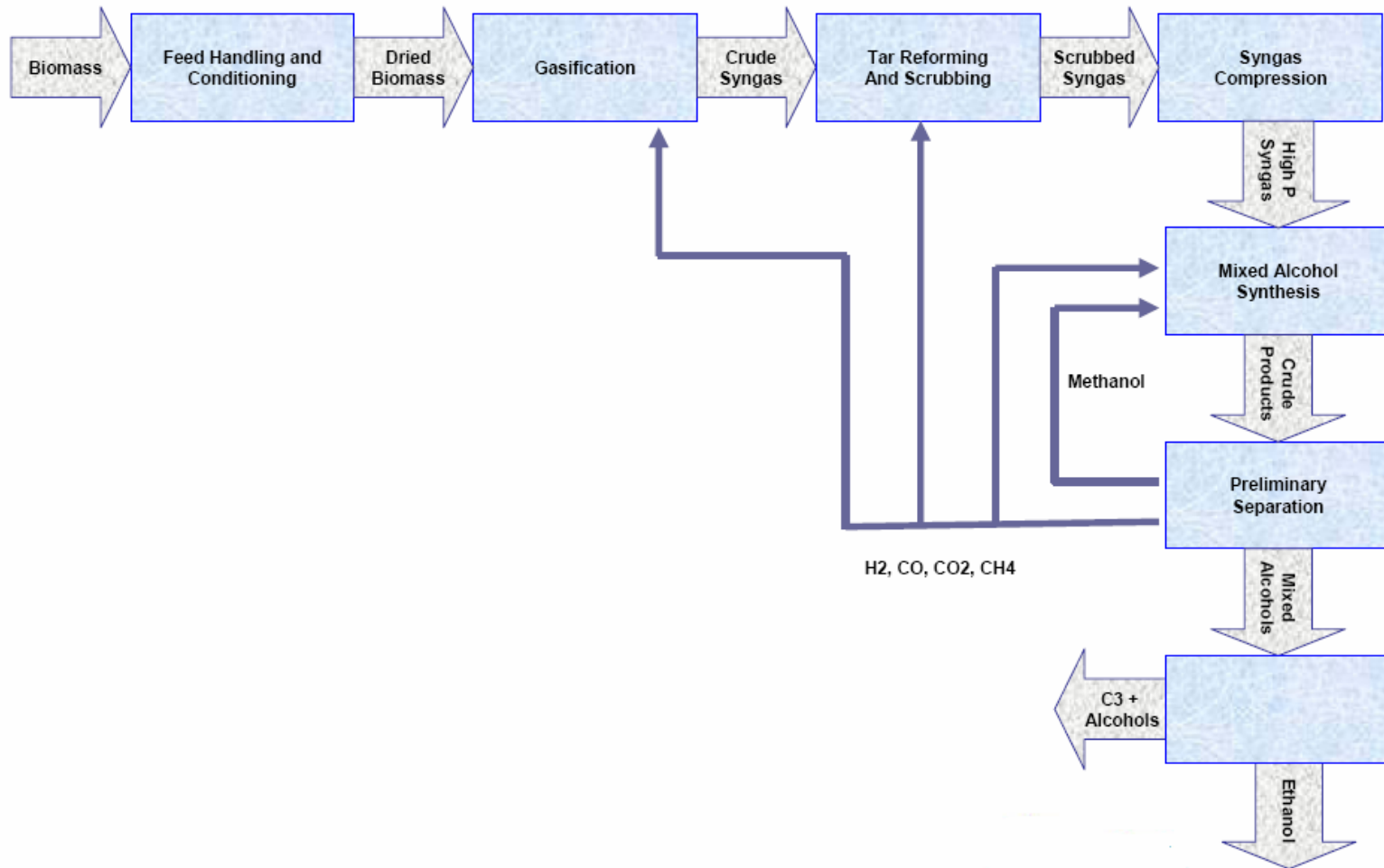


# 열화학적 바이오리파이너리 기술 개괄

# 전형적인 열화학적 바이오리 파이너리 생성물



# 전형적인 열화학적 바이오리 파이너리 흐름도



# 바이오매스 특성과 가스화기 이용사항

## Characteristic

**Fibrous Material**



**High Reactivity**

- High Volatiles Content
- High Char Reactivity



**Raw Syngas Composition**

- Tars
- Sulfur
- Alkali, Ammonia, Others



**Scale of Operation**



## Implications

**Feeding Systems**

- Particle Size Limitations, Pressurized Operation More Difficult

**Gasifier Design**

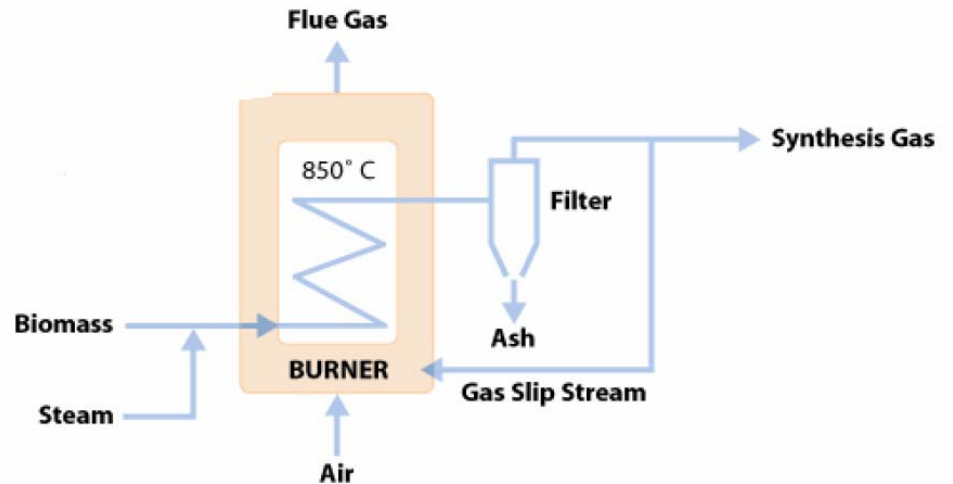
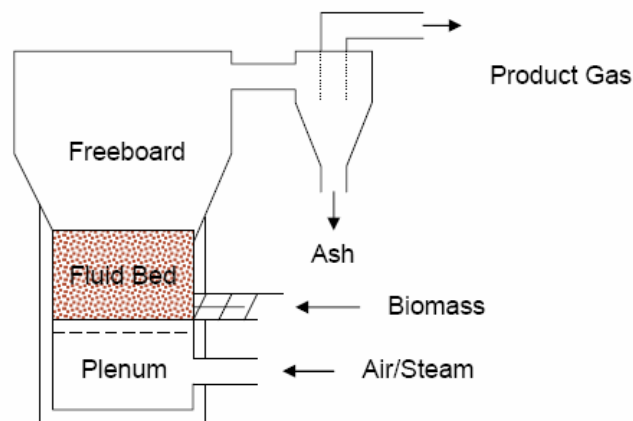
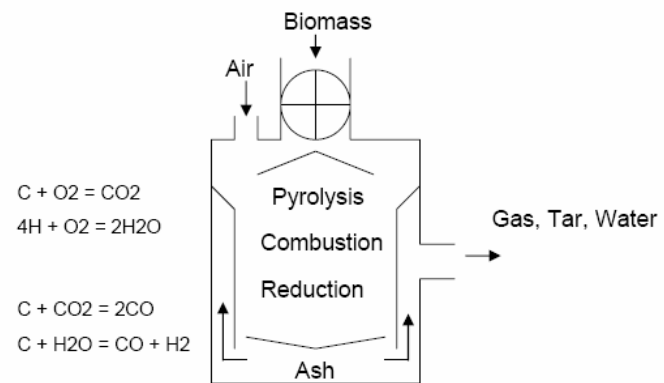
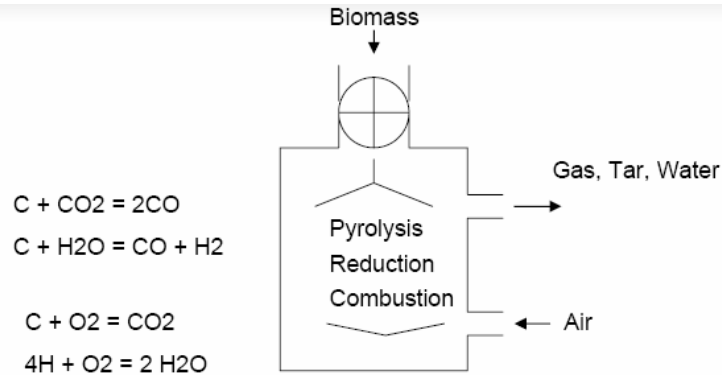
- Allows Gasification Without Pure Oxygen

**Gas Cleanup**

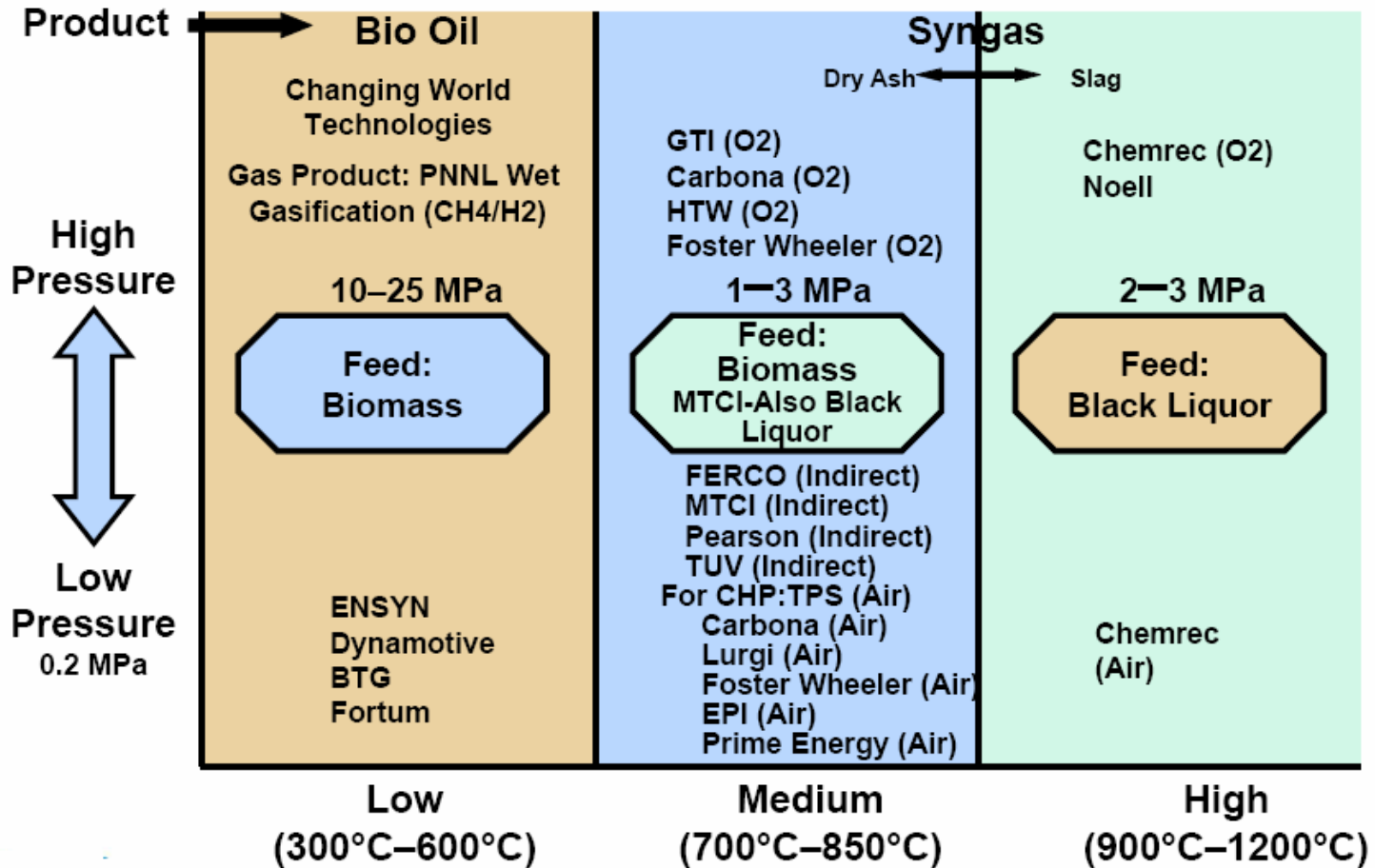
- More Tar, Water Soluble
- Low Sulfur (Except BL)
- Must Be Considered

**Limits Economies of Scale**

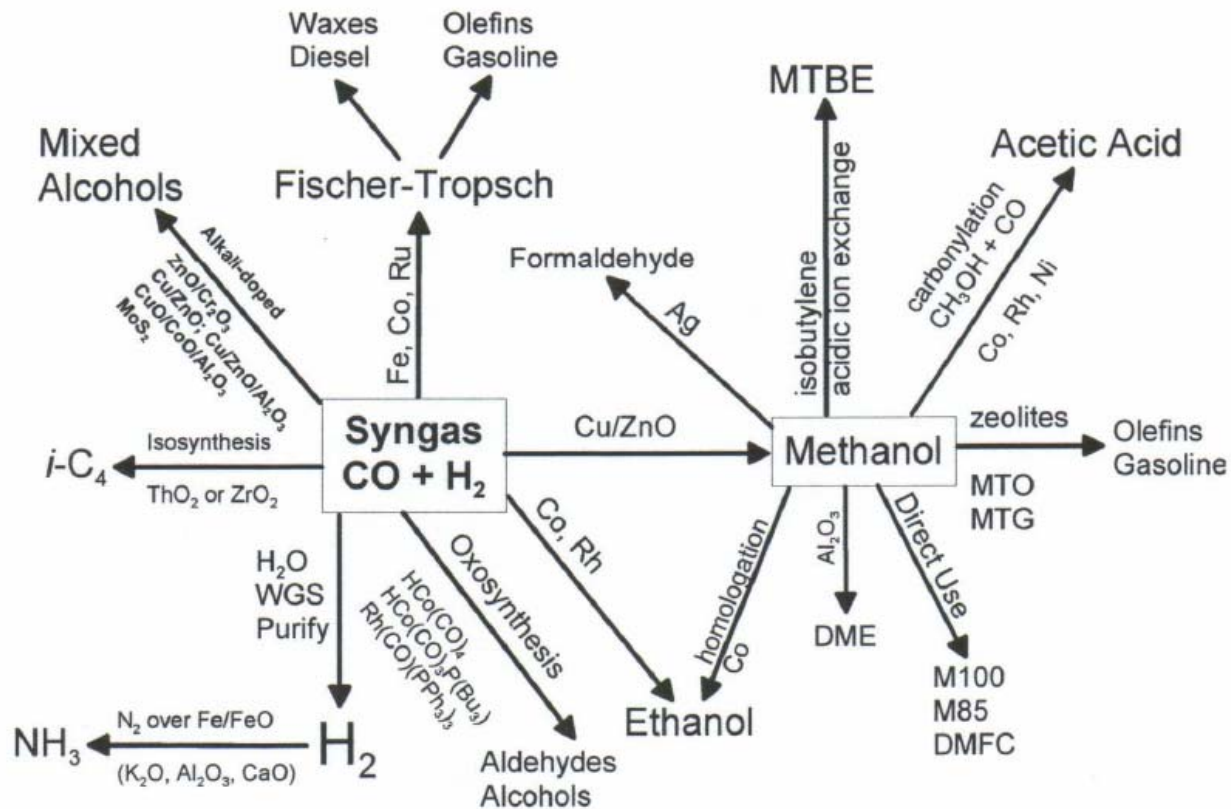
# 직접 가스화기 종류



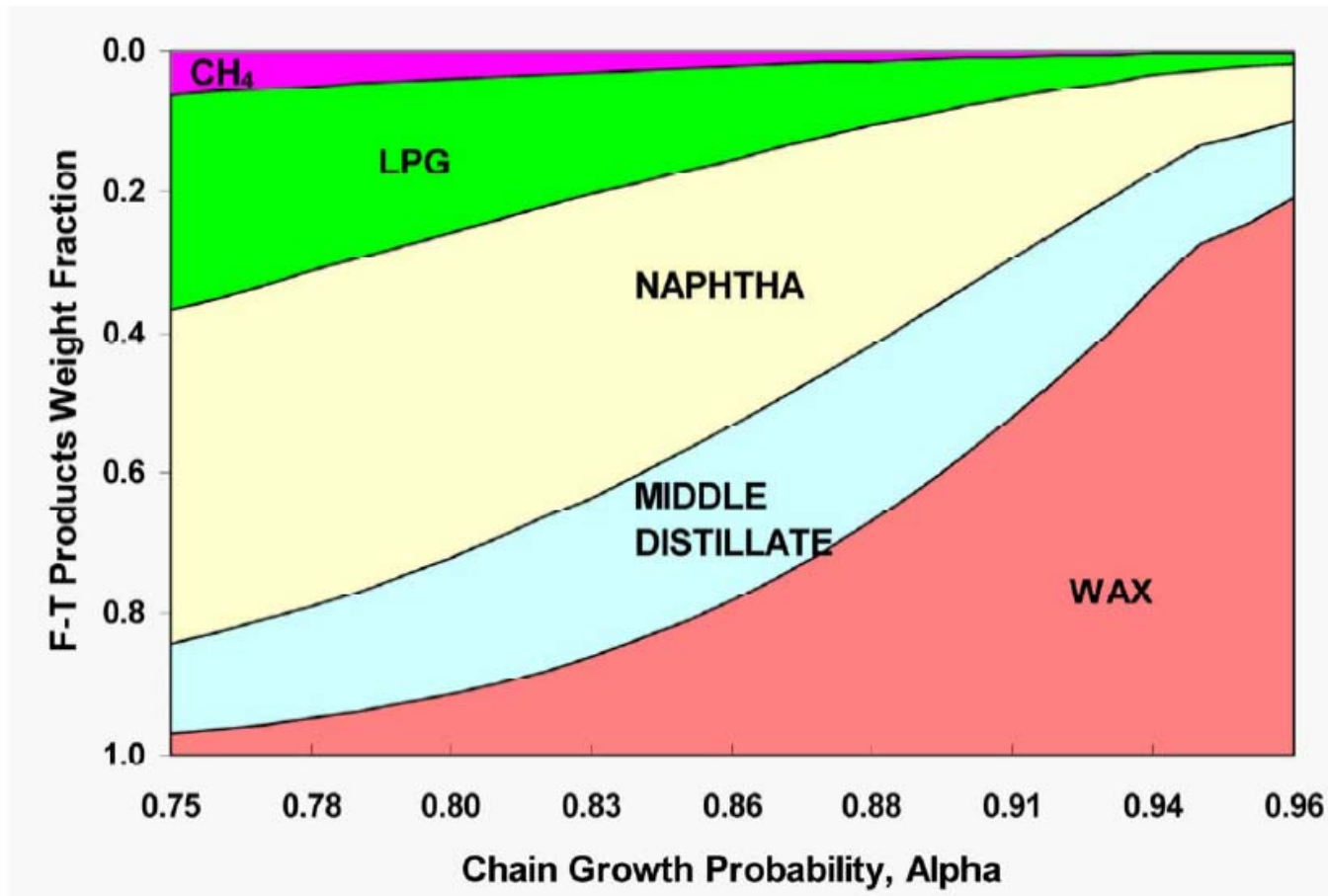
# 열화학적 바이오매스 전환



# 합성가스의 고부가가치화



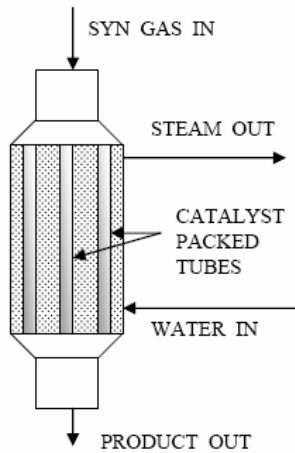
# F-T 생성물 분포



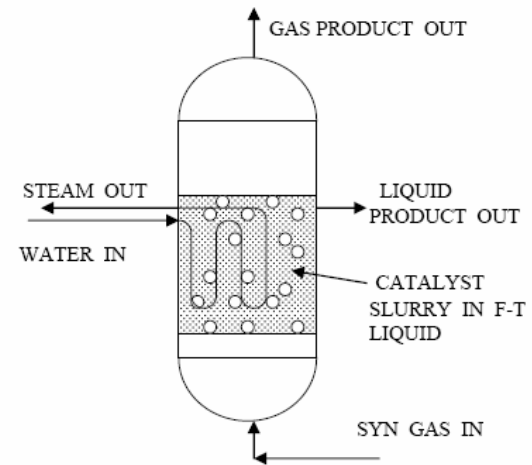


# 반응기 형태

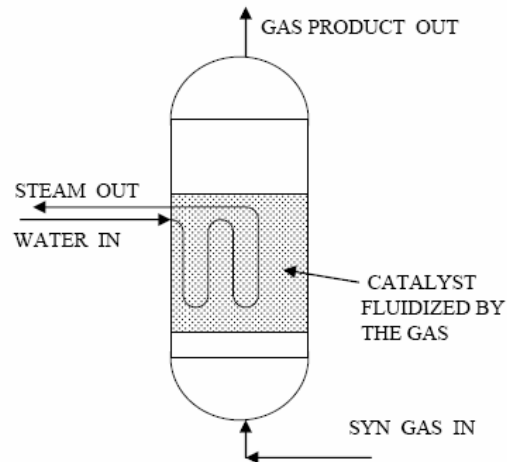
## Fixed Bed Reactor



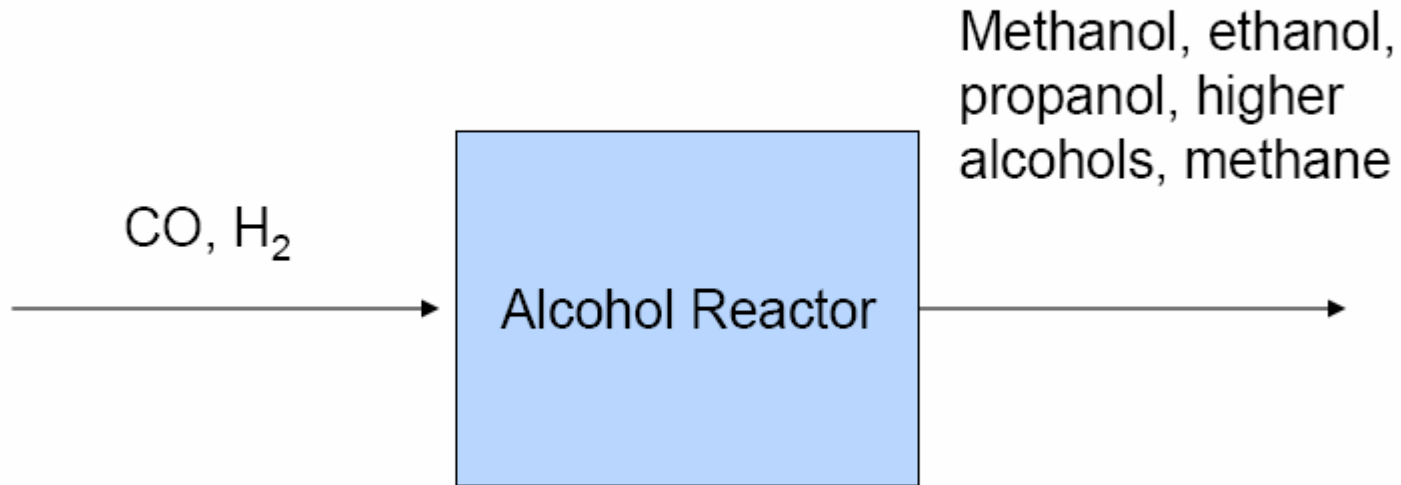
## Slurry Bubble Column Reactor



## Fluidized Bed Reactor



# 알코올 합성 반응기



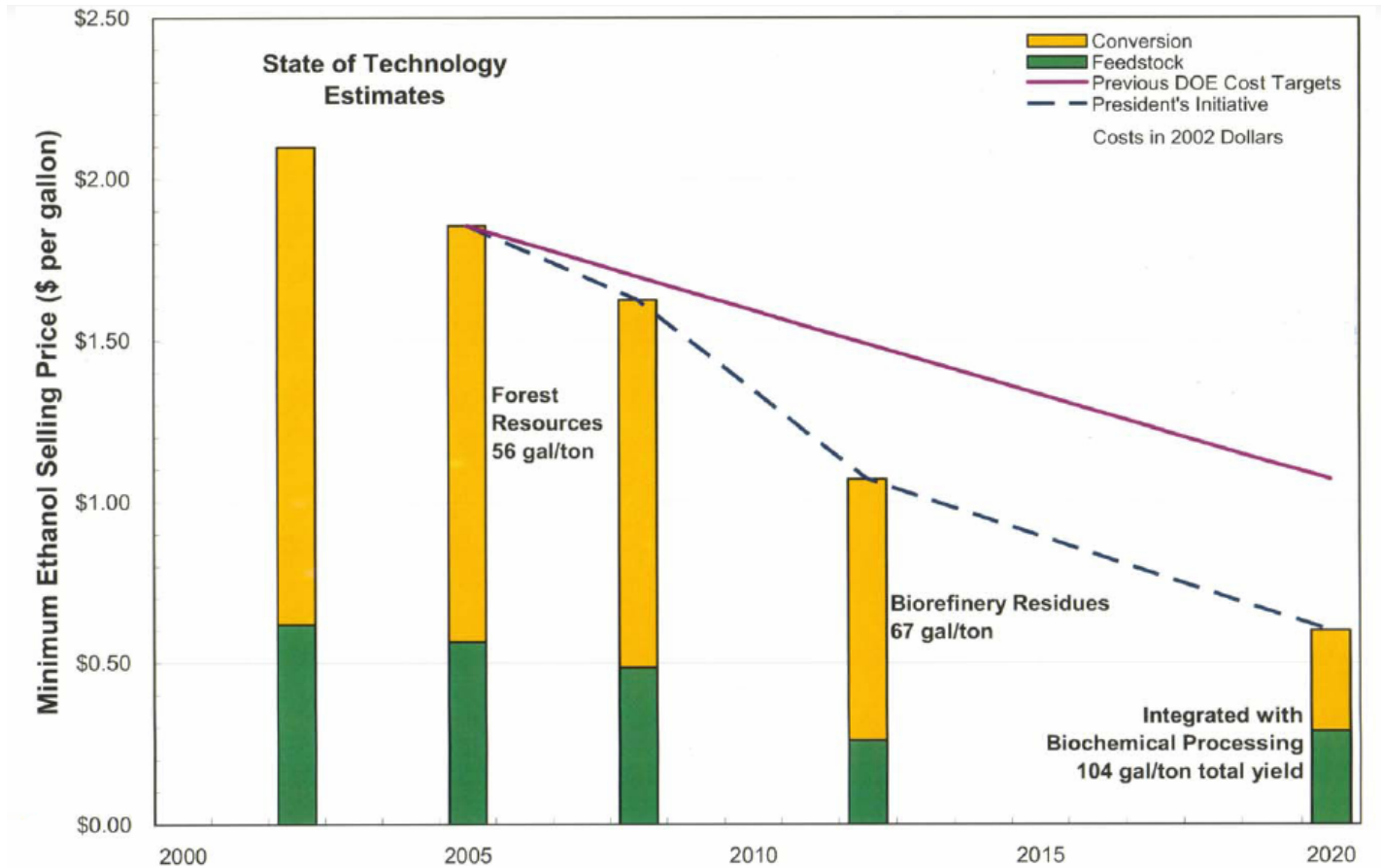
선택도: 30-90%

전환율: 5-60%

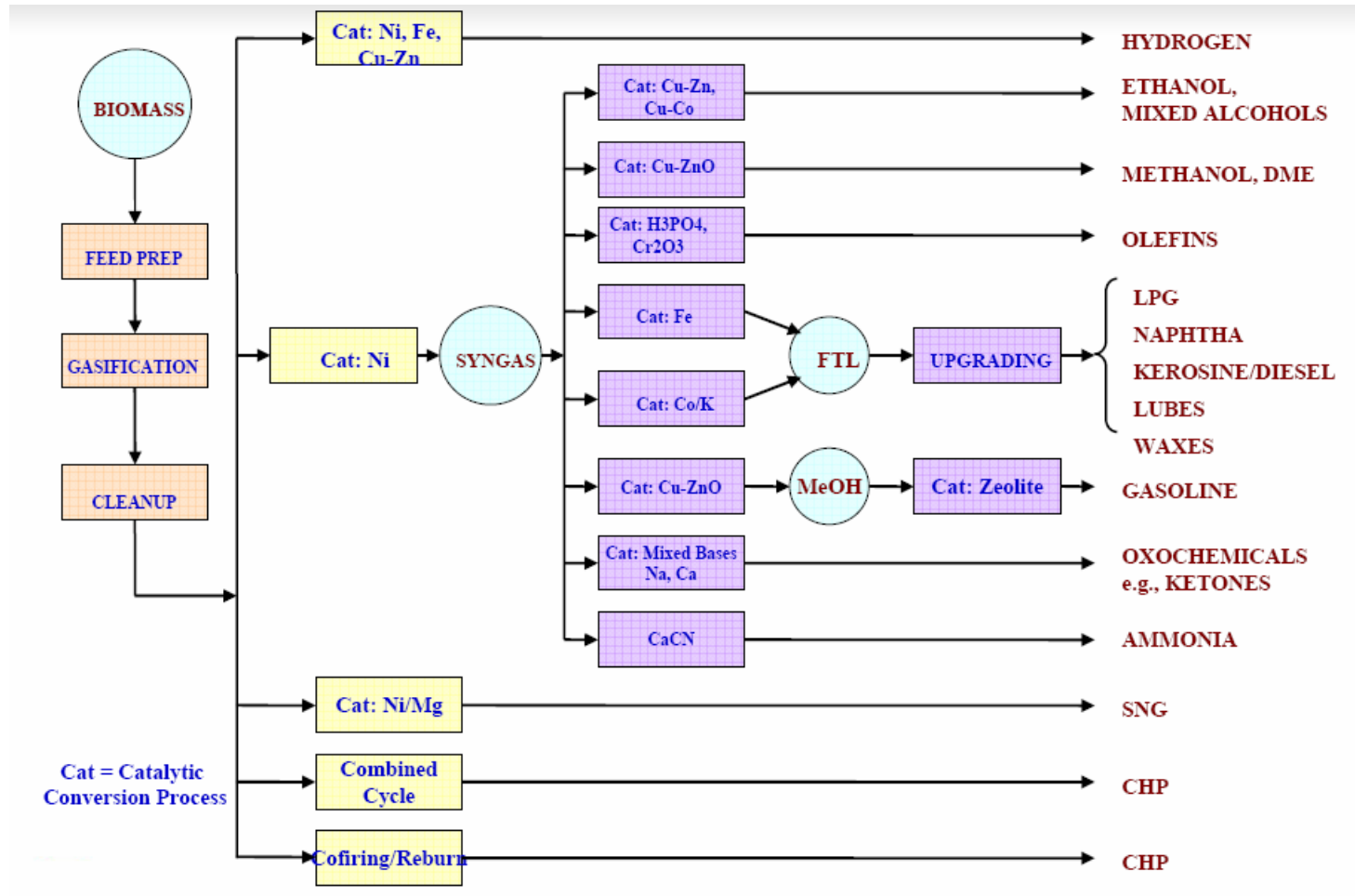
알코올: C1-C4

압력: -2600 psig

# 가스화를 통한 에탄올 합성비용



# 축매가스화를 통한 화학물질 합성



# 열화학적 바이오리파이너리

