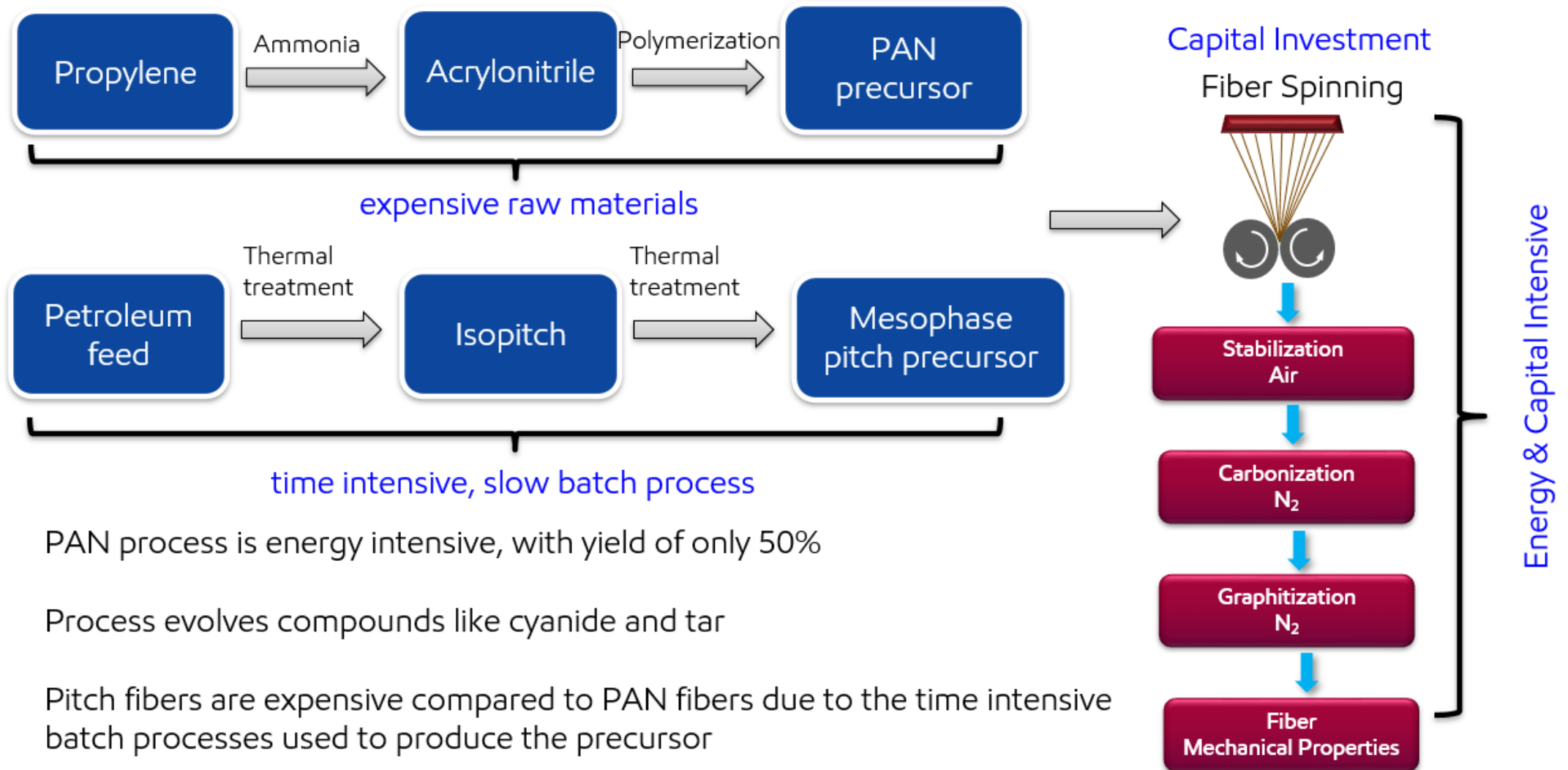


# Pitch-based carbon fiber composite fabrication for mass scale production

*Presented at IACMI Summer Member's Meeting  
June 21<sup>st</sup> 2023*

# Current processes for producing CF



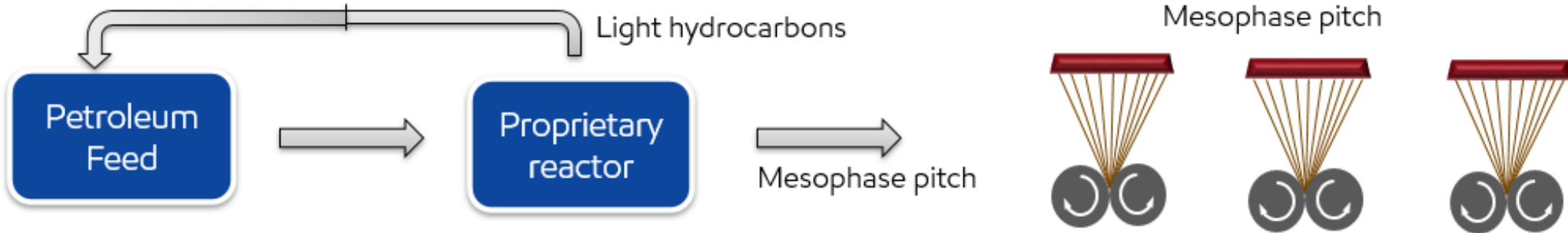
PAN process is energy intensive, with yield of only 50%

Process evolves compounds like cyanide and tar

Pitch fibers are expensive compared to PAN fibers due to the time intensive batch processes used to produce the precursor

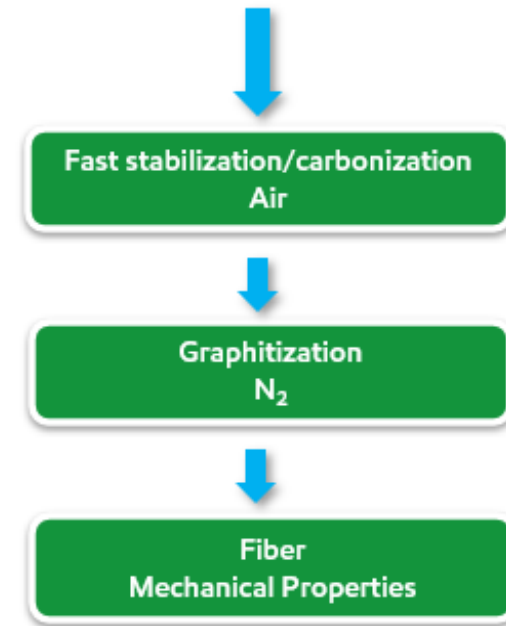
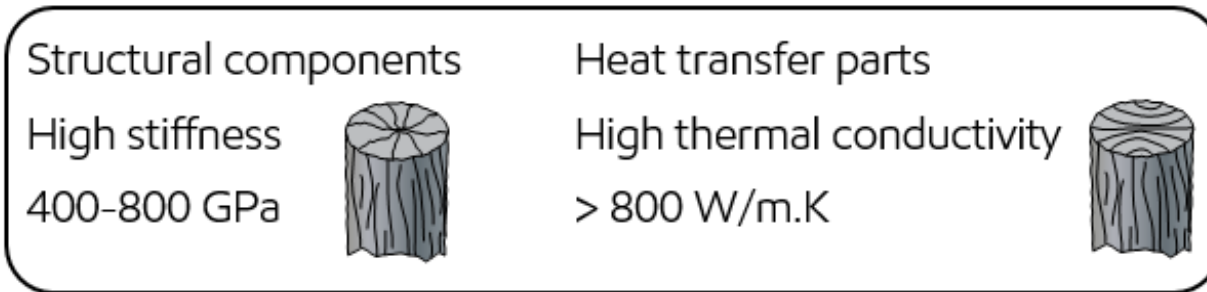
# Low cost CF enabled by process innovation

Fast, Clean, and Continuous process



Process innovation for producing low cost mesophase pitch using a fast, clean, and continuous process

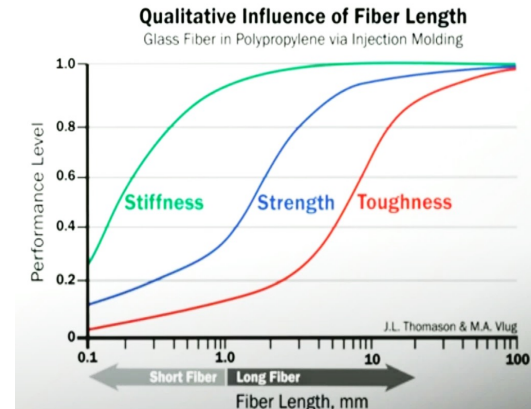
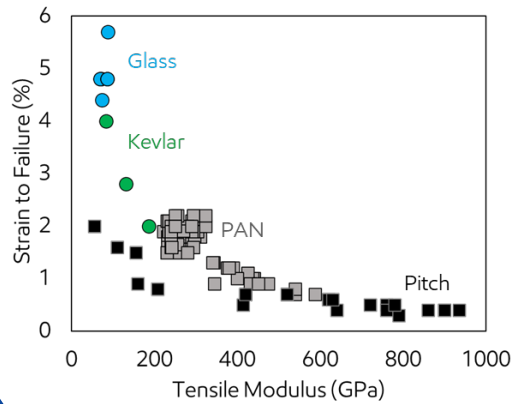
Mesophase precursor could result in quick stabilization and carbonization, with potential energy savings



# Pitch Fiber Composites

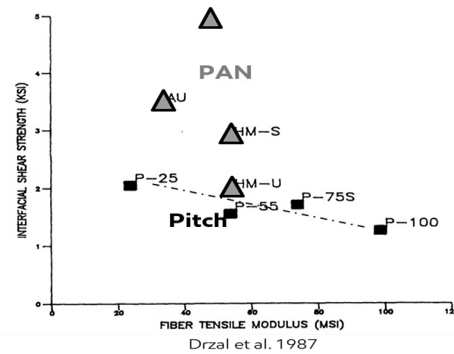
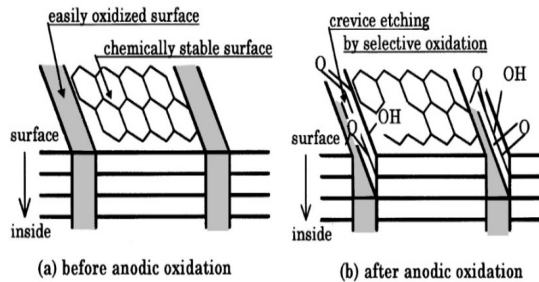
## Challenges

### Brittleness



- Demonstration of producing competitive high modulus, low cost pitch carbon fiber composites, with high throughput methods like IM, has not been explored in great details.

### Inertness



- Aiming at bridging this knowledge gap which may enable deployment of economic pitch fiber composites in high volume markets.

**ExxonMobil**