

# Research on Advanced Clean Hydrogen Production Technology Driven by Nuclear Energy

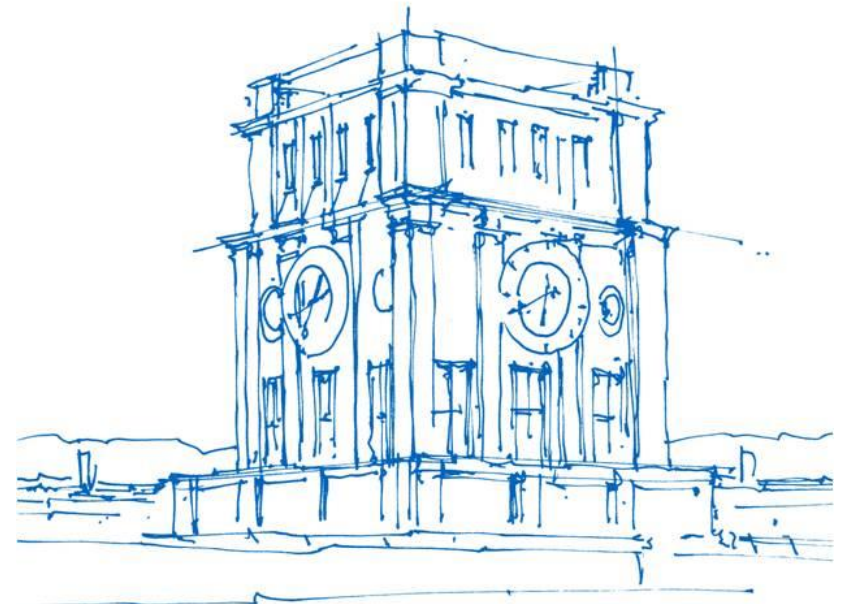
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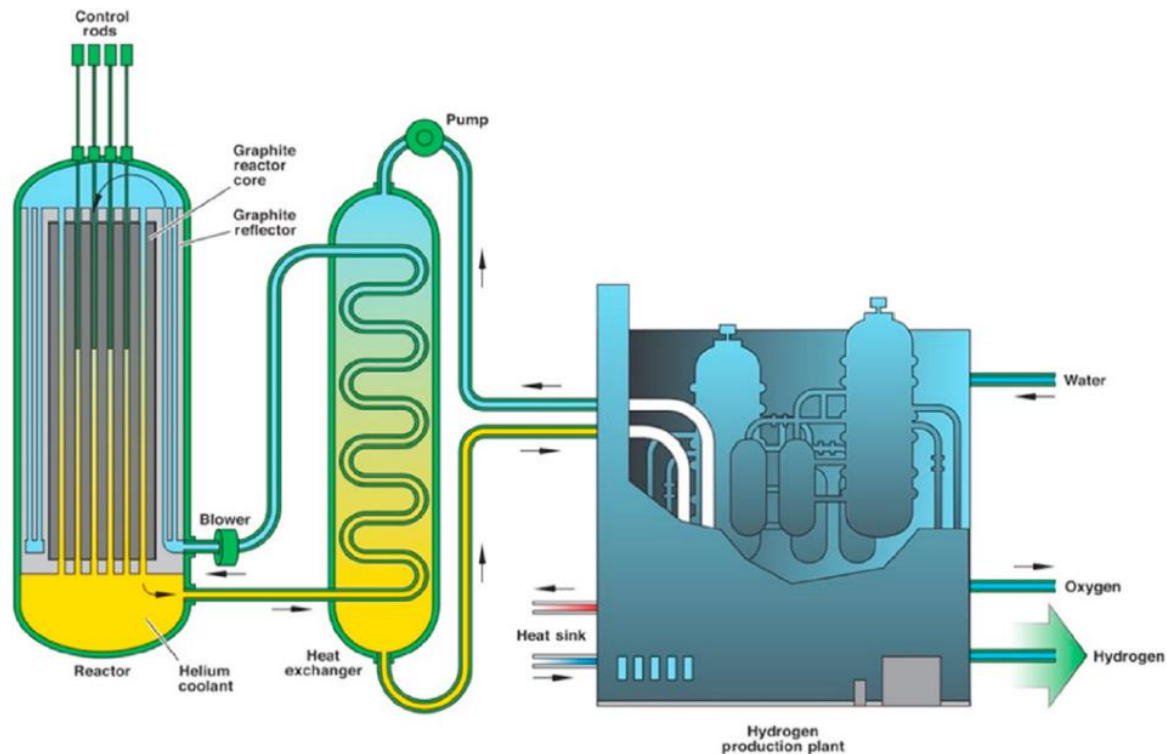
Garching, 14. Juli 2022



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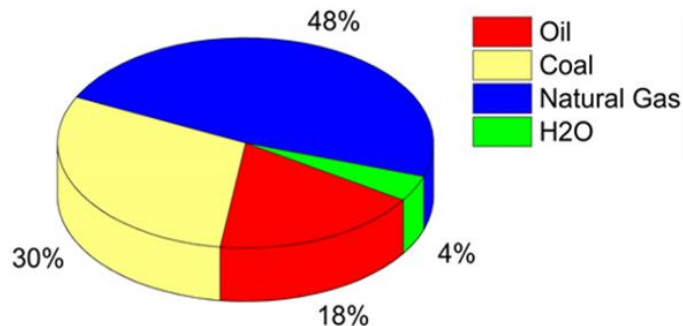
# What is Nuclear Hydrogen Production?

Nuclear Hydrogen Production is to couple a nuclear reactor with a hydrogen production plant using advanced hydrogen production processes to achieve large-scale hydrogen production.

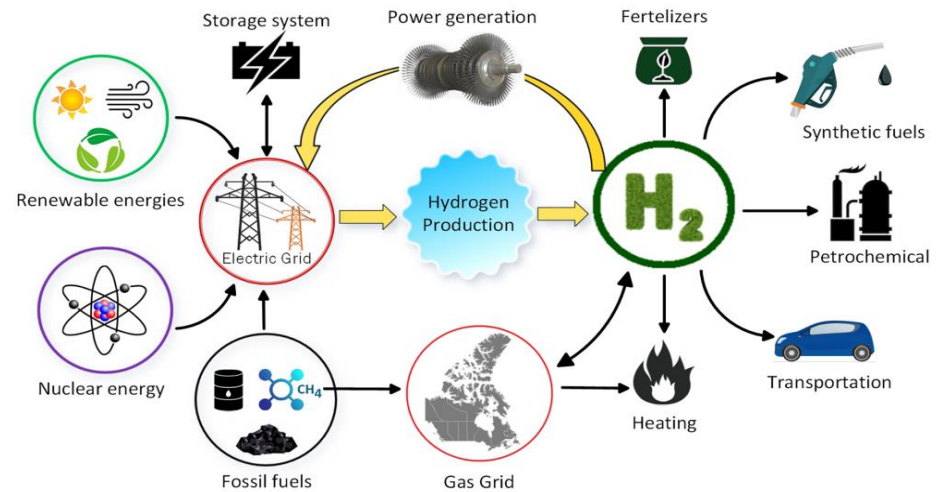


# Why we need Nuclear Hydrogen Production?

- ∅ - Increasing energy demand
- ∅ - Serious environmental issues
- ∅ - "Grey" hydrogen production
- ∅ - Unstable renewable energy

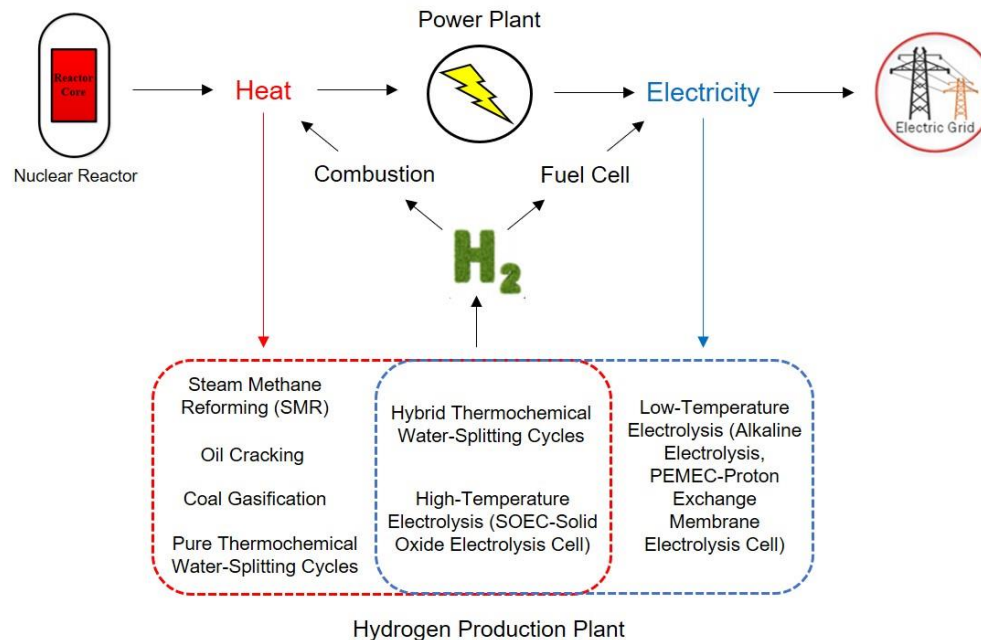


Current H<sub>2</sub> production is not "Clean"



# How can we achieve Nuclear Hydrogen Production?

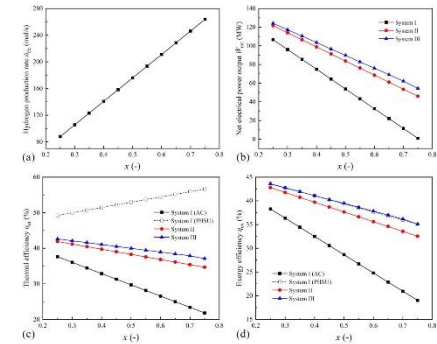
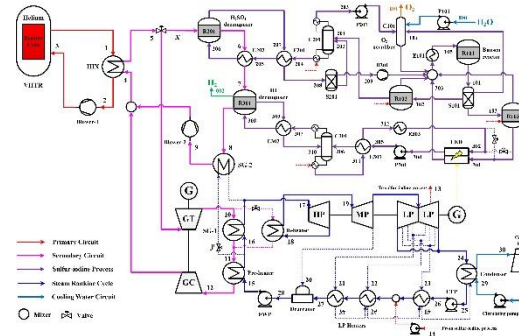
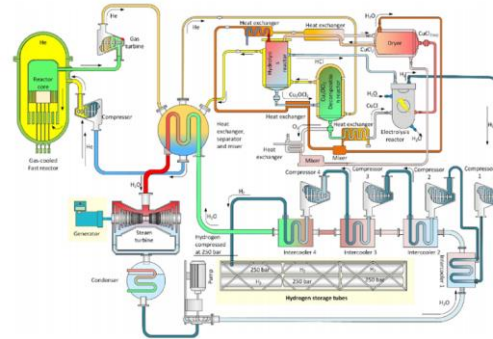
- ① Nuclear Energy → Thermal Energy → Hydrogen
- ② Nuclear Energy → Thermal Energy → Electrical Energy → Hydrogen
- ③ Nuclear Energy → Thermal Energy → Electrical Energy  
     ↙ Hydrogen ↘



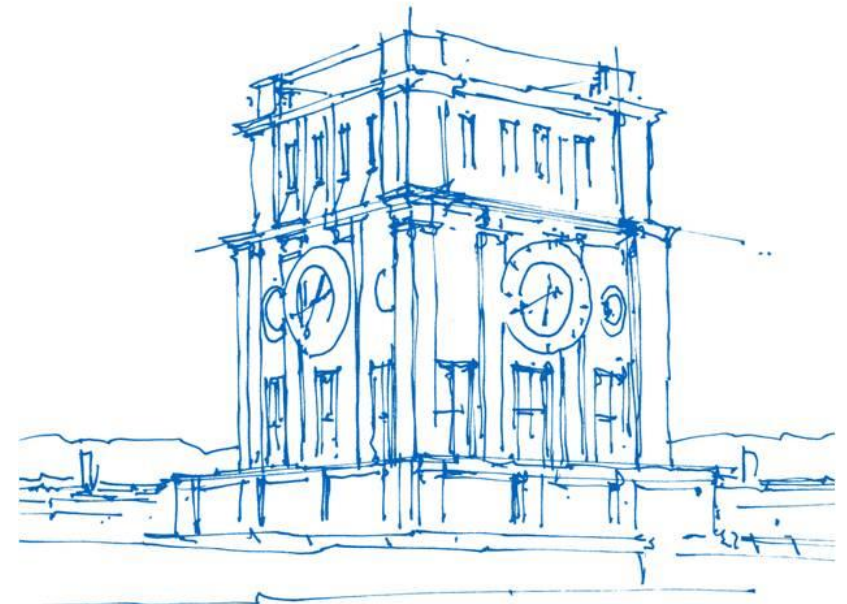
# What am I doing?

PhD project: Design, analysis and optimization of the very high-temperature gas-cooled reactor and sulfur-iodine thermochemical cycle-based nuclear hydrogen production system

- Ø - System design
- Ø - Parametric analysis
- Ø - System optimization
- Ø - Economic analysis



Thanks for your attention!



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