Norinaga Research Group - Facilities



Reactors/Lab Plants

- Flow reactors for CO₂ methanation with an automated product analysis system
- · CO₂ absorption/regeneration towers with on line gas analysis system
- Biomass/coal rapid pyrolysis product GC/GCMS analysis system
- Pressurized continuous flow reactor (~20MPa)
- Coal hot briquetting apparatus
- Pyrolysis furnace
- High pressure reactor

Analyzers

- · TG/DTA
- · GCs TCD, FID, FPD, FTD
- · GC/MS
- · HPLC UV-vis, RI
- Karl Fisher Titrator
- · TOC
- In situ FT-IR (ReactIR)
- · FT-IR
- · Reaction calorimeter
- Micro GC
- · Quadrupole mass spectrometer
- Automatic specific surface area/pore size

distribution measurement instrument

Automated catalyst analyzer

Software tools

- · Gaussian
- · TURBOMOLE
- · COSMOtherm
- · DETCHEM
- · CHEMKIN
- Pointwise
- · OpenFOAM
- · COMSOL
- ParaView
- · PRO/II
- · Aspen





