

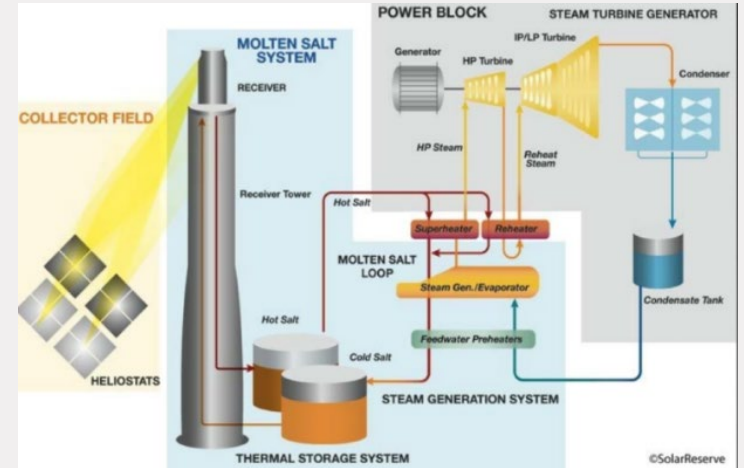


Profiles @SET

Master Sustainable Energy Technology

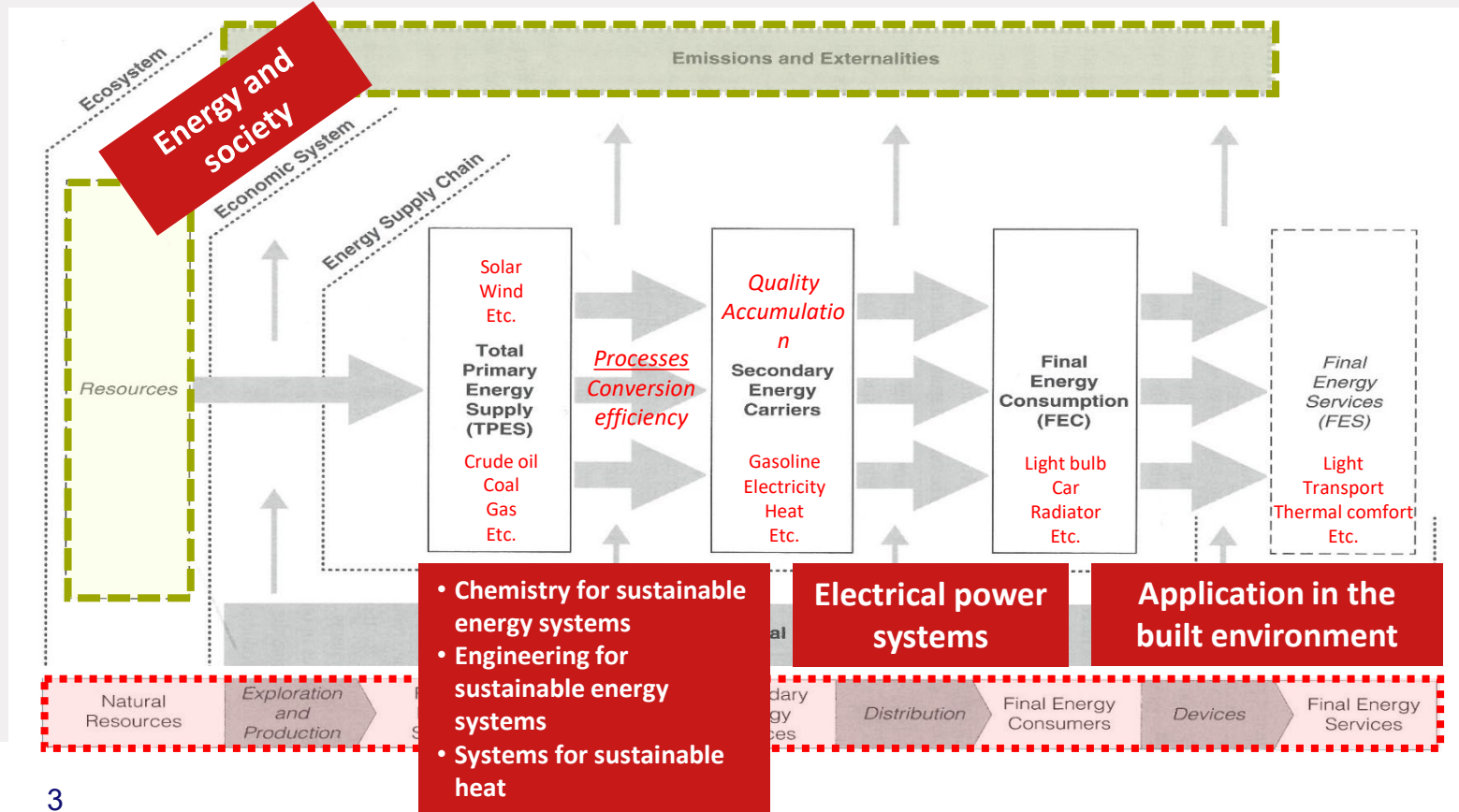
Six specialization profiles

- Chemistry for sustainable energy systems (AP & CEC)
- Engineering for sustainable energy systems (CEC & ME)
- Systems for sustainable heat (AP, CEC & ME)
- Electrical power systems (EE)
- Application in built environment (BE & ME)
- Energy & society (IE&IS)



Positioning of specialization themes in the energy system

Bradford 'The energy system' fig 1.9; adapted from 'Energy efficiency indicators: Fundamentals on Statistics' (Paris: OECD/IEA, 2014)

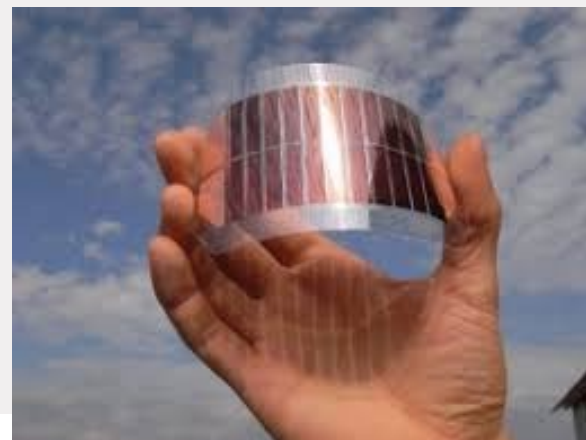
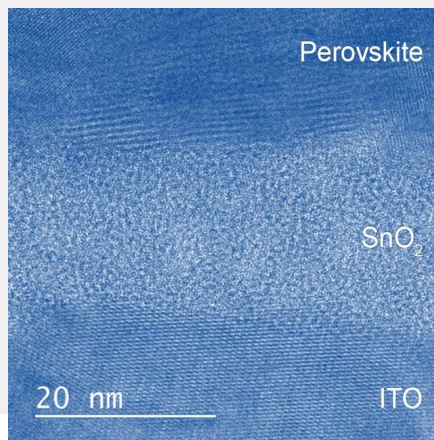
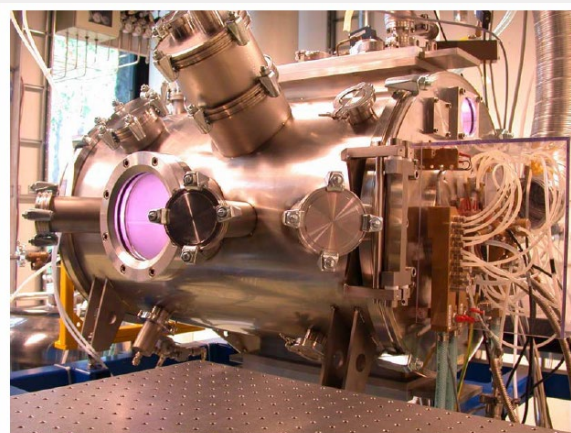


Chemistry for sustainable energy systems

Applied Physics and Chemical Engineering & Chemistry

Chemistry of (photo/electro/plasma-) catalysis for high value chemicals

- Crystalline silicon and thin film solar cells
- Polymer solar cells

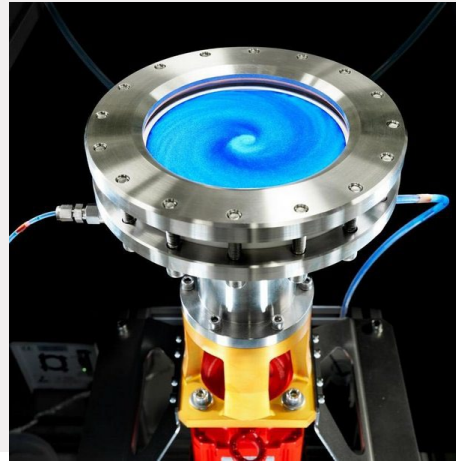


Engineering for sustainable energy systems

Mechanical Engineering and Chemical Engineering & Chemistry

Understanding of (electro)chemical transformation, multiphase transport phenomena and separation

- H₂O electrolysis
- H₂ combustion systems
- Heavy duty combustion systems
- Metal fuels

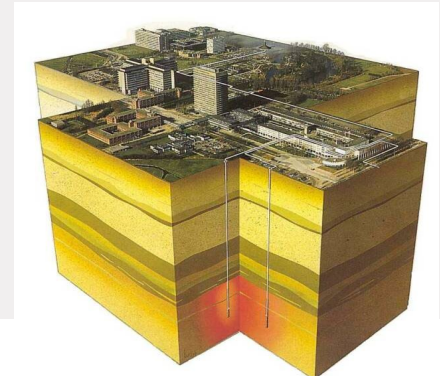
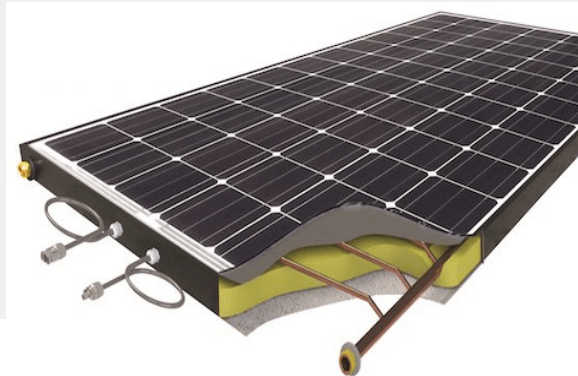
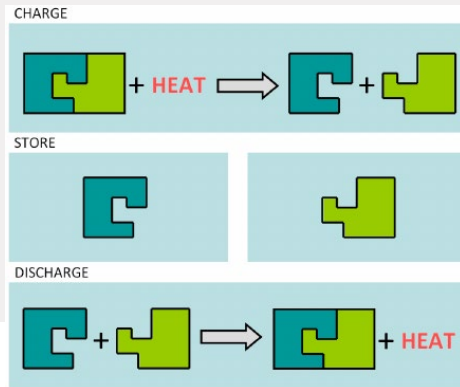


Systems for sustainable heat

Mechanical Engineering, Applied Physics and Chemical Engineering & Chemistry

Thermal energy storage with emphasis on development of new storage materials and systems.

- Thermochemical Heat storage systems
- Geothermic power plants
- PhotoVoltaic Thermal panels

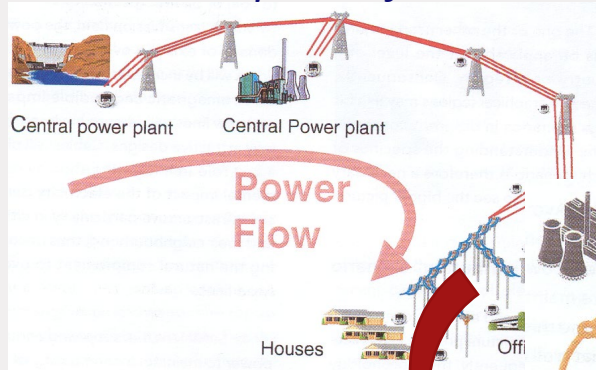


Electrical power systems

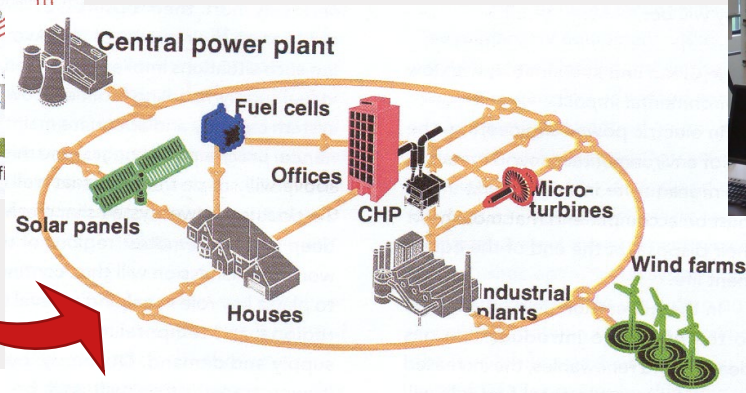
Electrical Engineering

Transforming electricity grids towards a truly future-proof, sustainable energy supply

vertical power flow



horizontal power flow



The TU/e Power Quality Laboratory

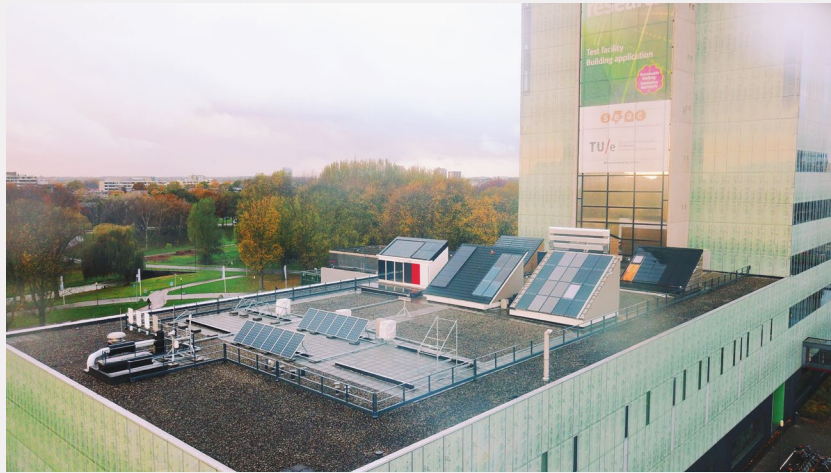


Application in built environment

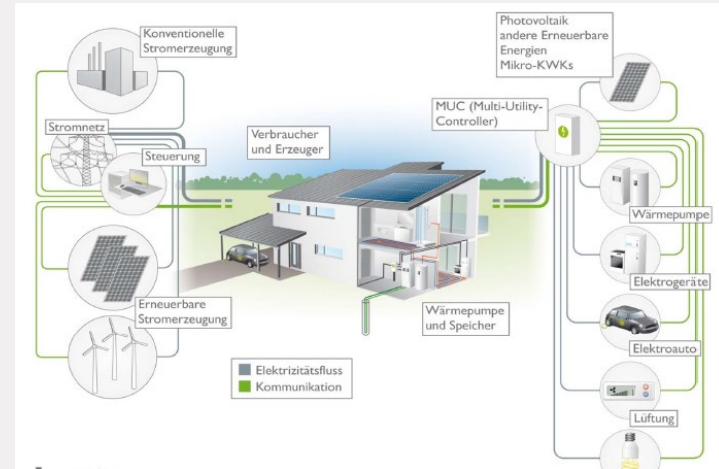
Mechanical Engineering & Built Environment

Preservation of energy and limitation of the environmental impact while providing a healthy and comfortable indoor and outdoor environment

- Sustainable energy-positive built environment



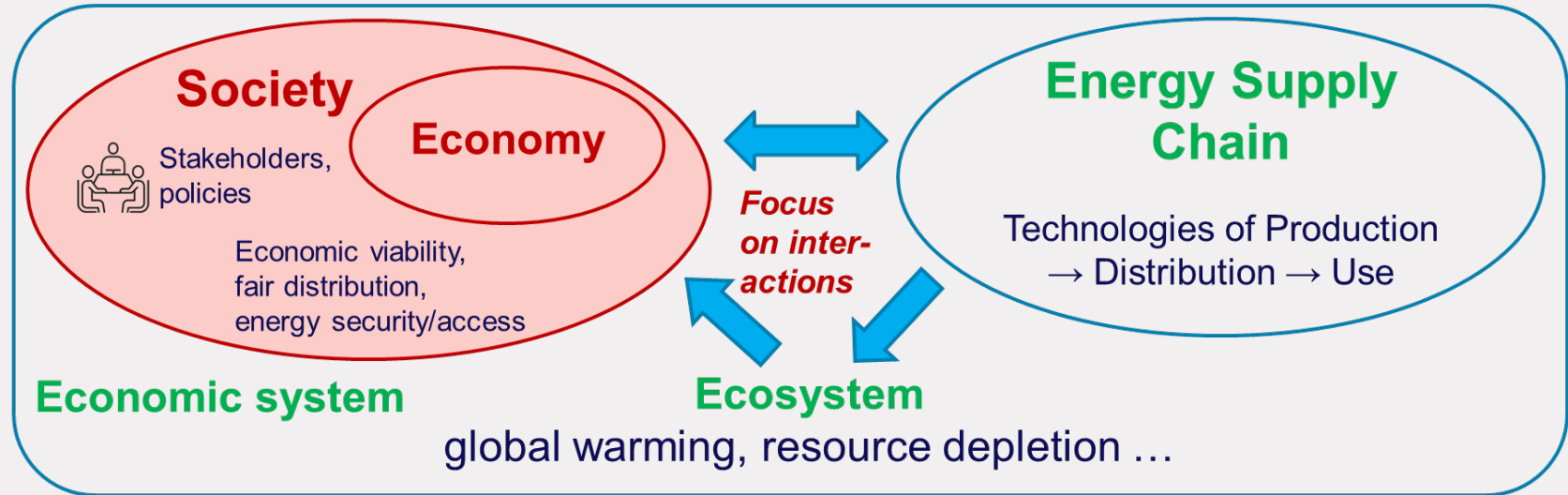
- Climate adaptive building shells



Energy & society

Industrial Engineering and Innovation Sciences

How technology works in the real world: development, application and diffusion of technology



SET profiles & sections

Sources, Fuels & Storage	Chemistry for sustainable energy systems <ul style="list-style-type: none">• Plasma and Materials Processing (AP)• Stimuli-responsive functional m & d (CE&C)• Sustainable process engineering (CE&C)• Multi-scale modelling of multi-phase flows (CE&C)	Engineering for sustainable energy systems <ul style="list-style-type: none">• Power & Flow (ME)• Energy Technology (ME)• Stimuli-responsive functional m & d (CE&C)• Sustainable process engineering (CE&C)• Multi-scale modelling of multi-phase flows (CE&C)	Systems for sustainable heat <ul style="list-style-type: none">• Energy Technology (ME)• Power & Flow (ME)• Stimuli-responsive functional m & d (CE&C)• Sustainable process engineering (CE&C)• Multi-scale modelling of multi-phase flows (CE&C)• Transport in Permeable Media (AP)
System integration	Electrical power systems <ul style="list-style-type: none">• Electrical Energy Systems (EE)• Electromechanics and Power Electronics (EE)	Application in the built environment <ul style="list-style-type: none">• Building Physics and Services (BE)• Energy Technology (ME)	Energy & society <ul style="list-style-type: none">• Technology, Innovation & Society (IE&IS)

*Only for students with bachelor's degree Chemical Engineering or comparable