

Cluster 3 Engineering

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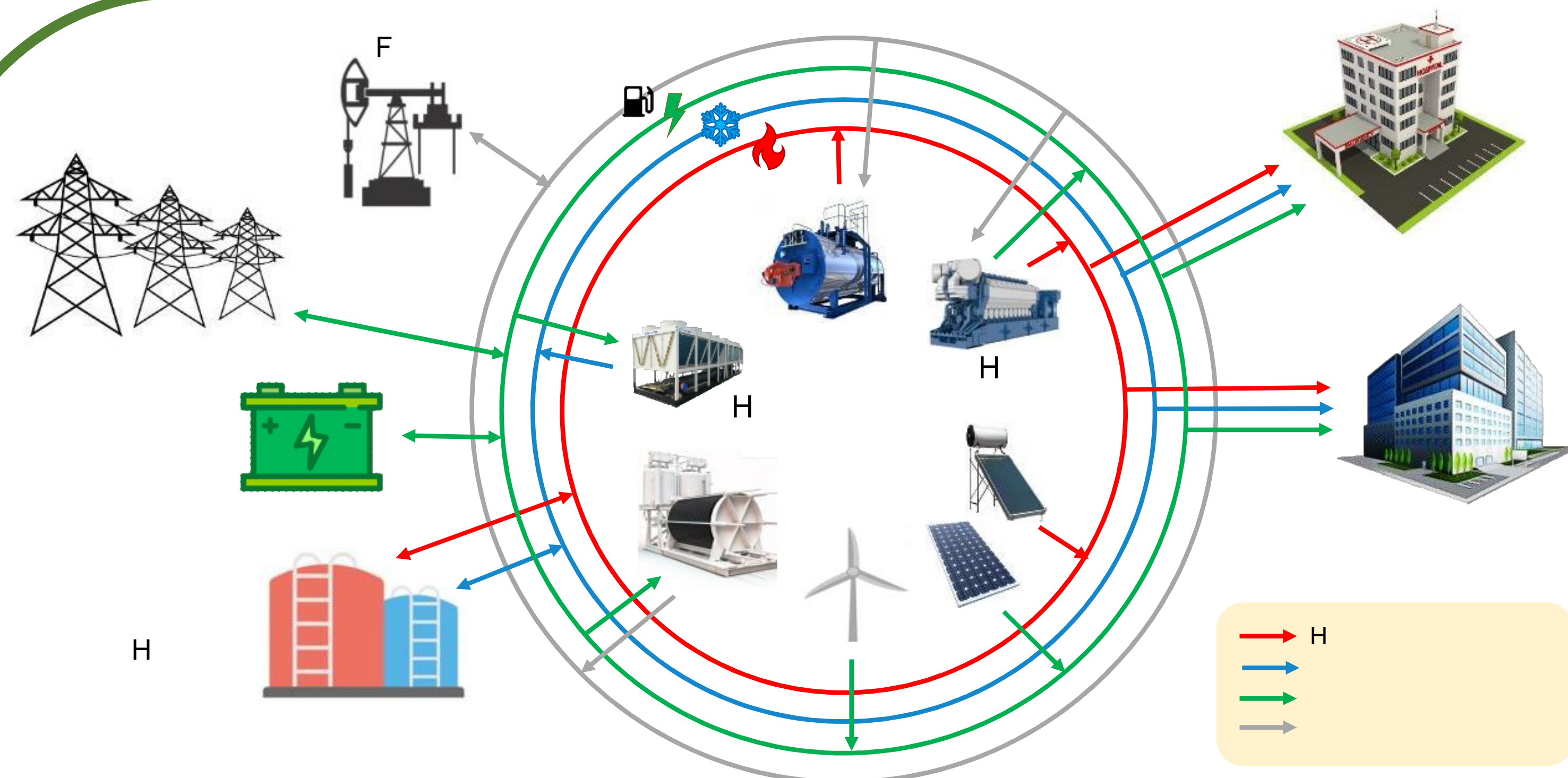
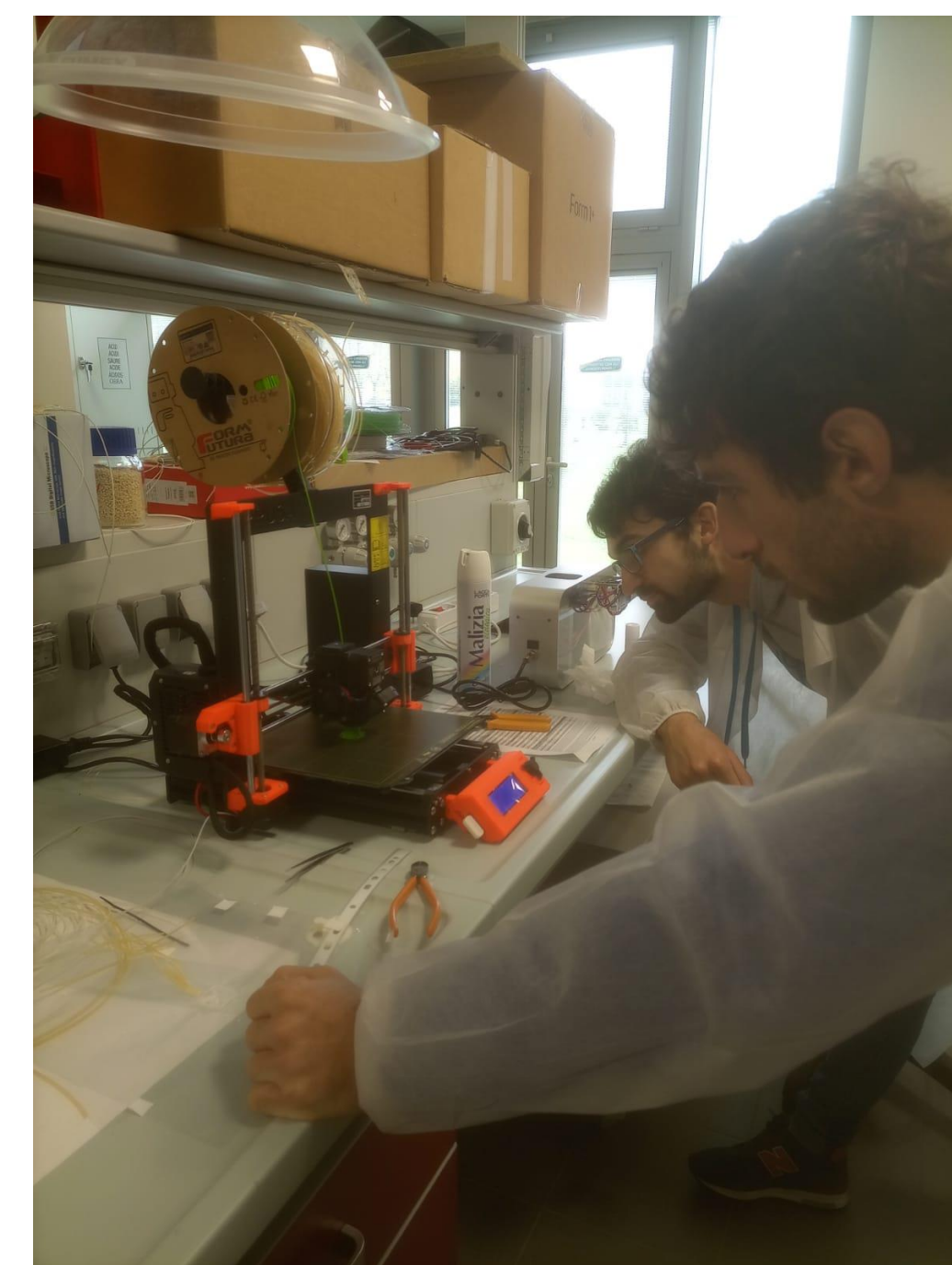
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Materials

Functional materials' design, synthesis and characterization.

Main available equipment :

- Double screw extruder and Single screw extruders
- Polymer injection molding
- Shredder In-house layer-by-layer equipment
- Blow Molding
- Cast extrusion
- Hot press
- Polymer additive manufacturing equipment:
 - SLA LCD bottom-up and SLA top-down
 - FDM
- Mechanical characterization: DMA, Stress and Strain
- Thermal Characterization: DMTA, DSC, TGA
- Software:
 - Analyst SimaPro plus Ecoinvent
 - LCA



Energy

- Energy Generation, Conversion and Use
- Renewable Energy Sources
- Storage
- Integration and Optimization of Energy Networks
- Hydrogen & Power-to-Gas Systems integration
- Pollutant Emissions and Environmental effects
- Materials for Energy harvesting and Storage
- Mobility
- Solutions for Mitigation and Biodiversity
- Costs/benefits & LCA for Energy Supply Chains
- Water cycle & resources
- Precision Agriculture
- Climate changes
- Internet- & Energy-of-Things (IoT & EoT)



Main Current Projects

- ❖ H2020-MSCA-RISE: Polymer engineering via molecular design: embedding electrical and optical properties into VITrimers (VIT)
- ❖ PNRR ECOSISTER project “Ecosystem for Sustainable Transition in Emilia-Romagna”
- ❖ SYNBIOSE-Syngas from BIOMass for Service sector
- ❖ ERA-Net SES: IFAISTOS - intelligent electroFuel production for An Integrated STORage System
- ❖ H2020: ALIGHT-A Lighthouse for the introduction of sustainable aviation solutions for the future