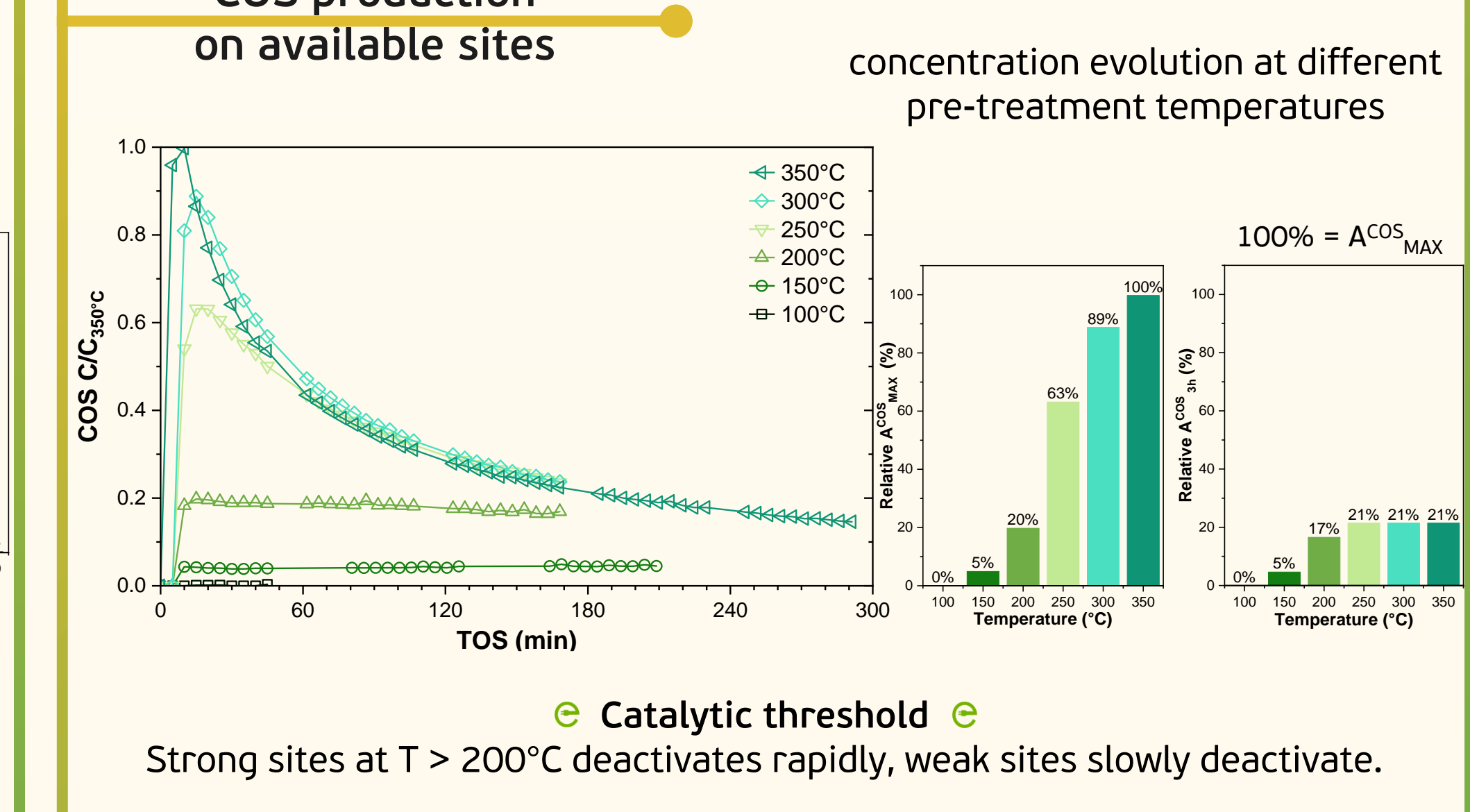
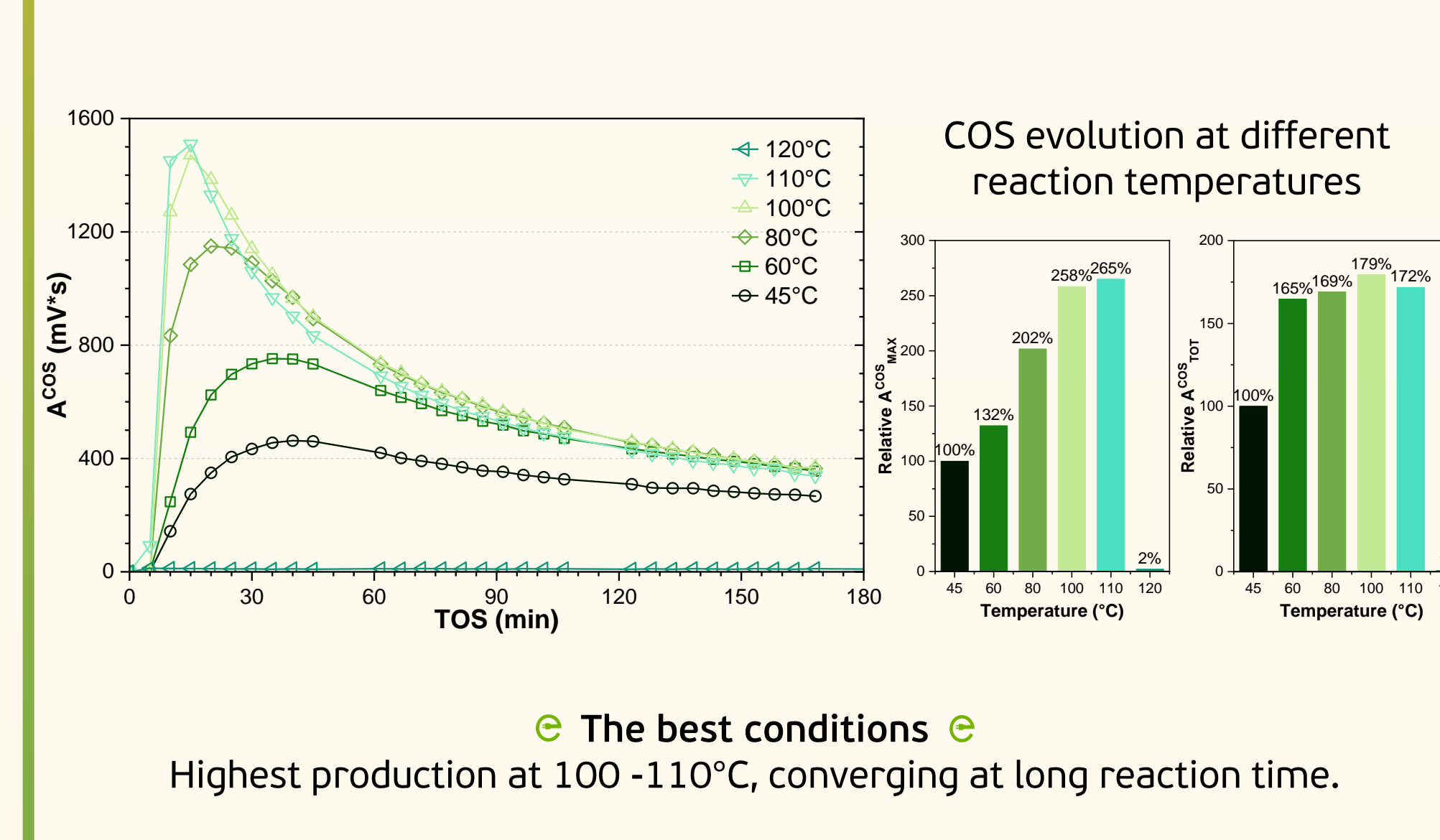
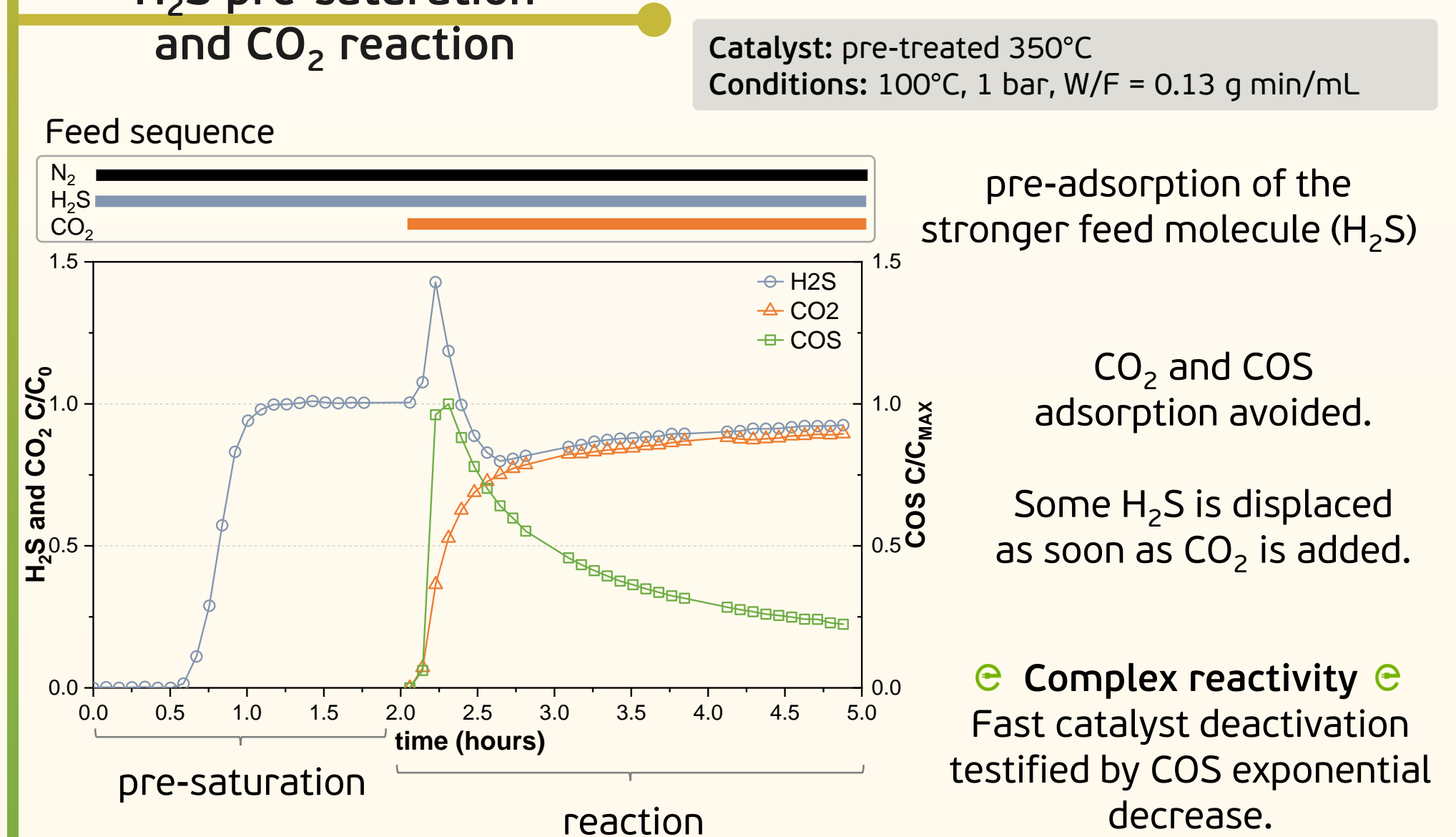
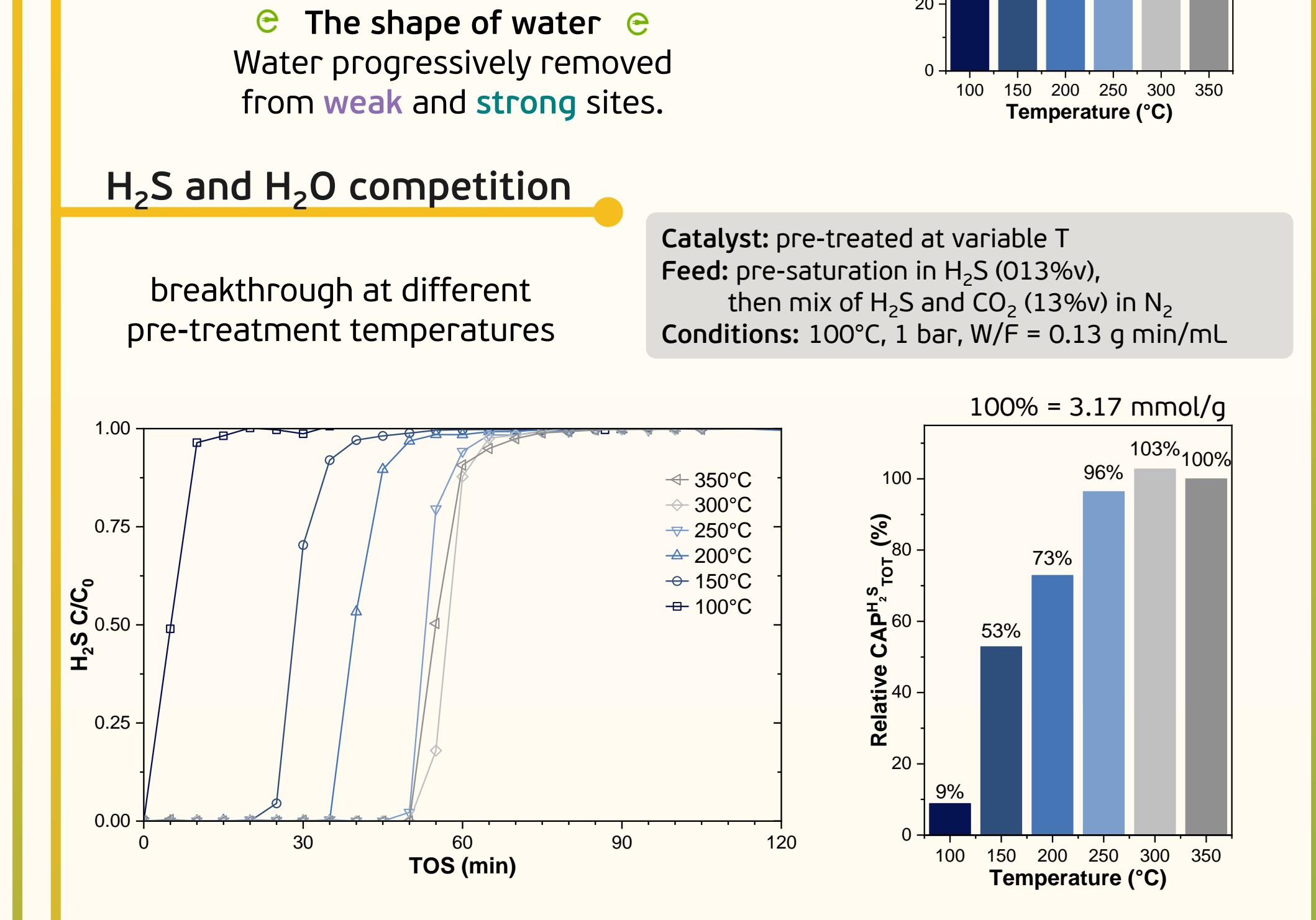
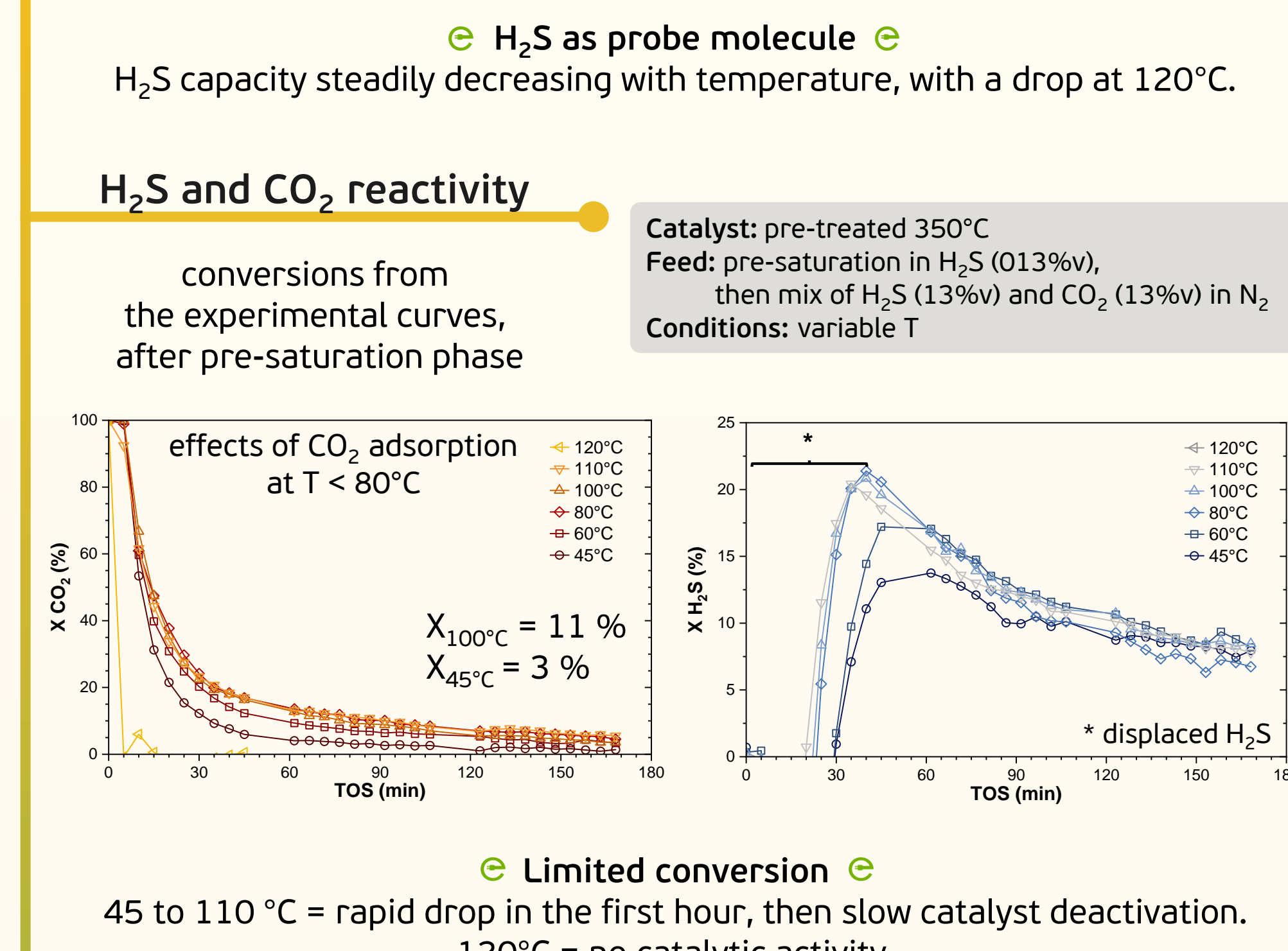
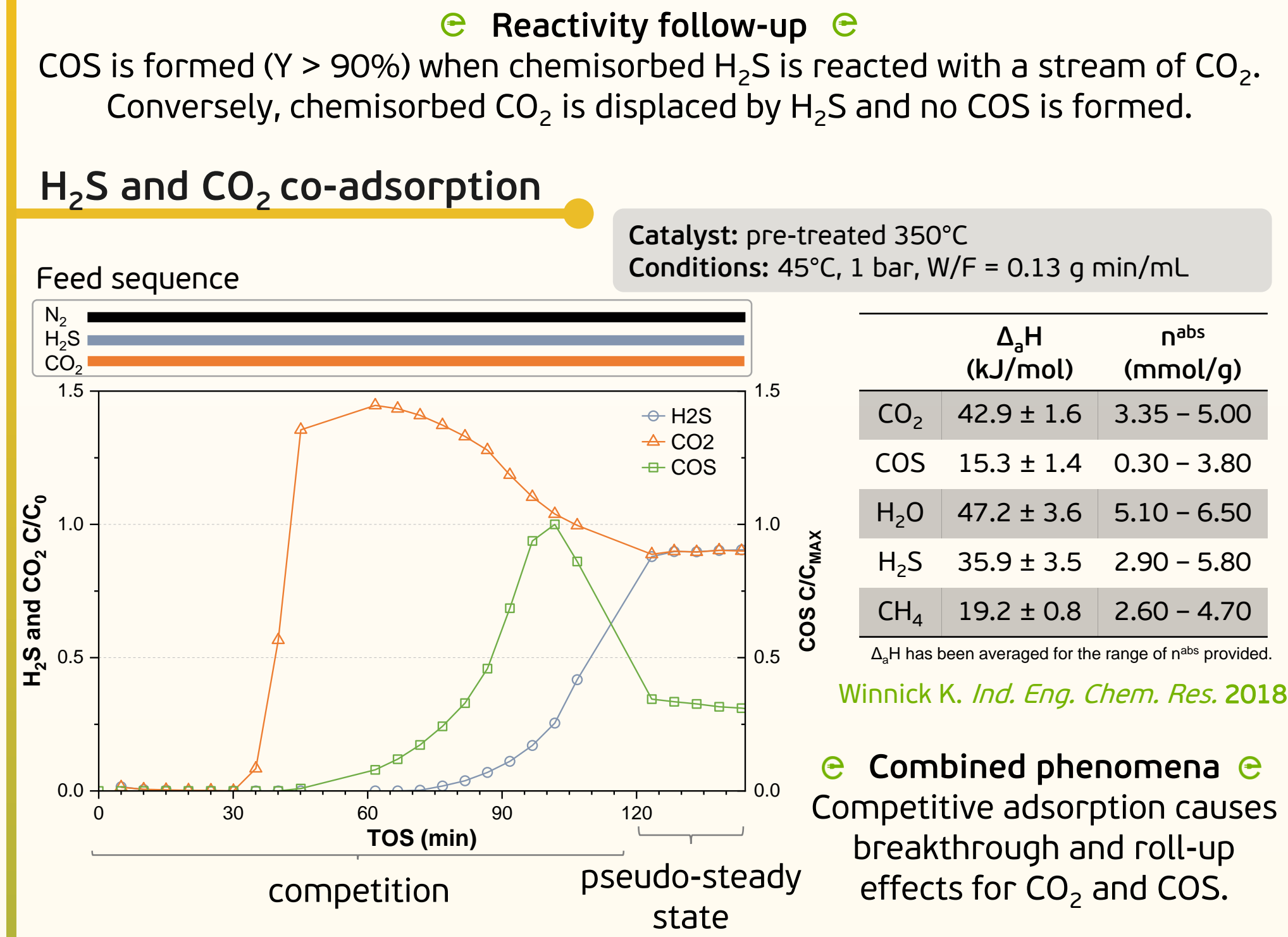
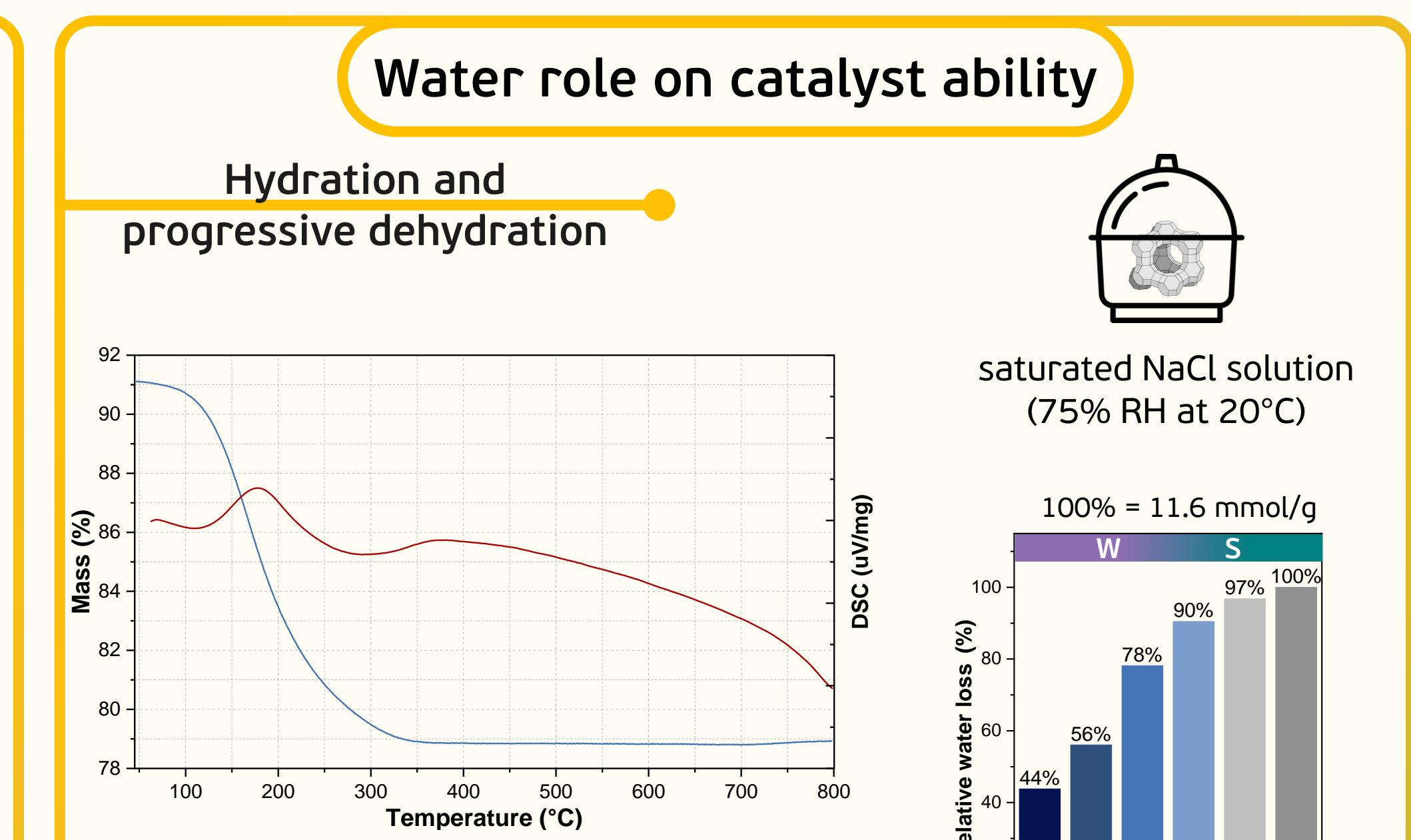
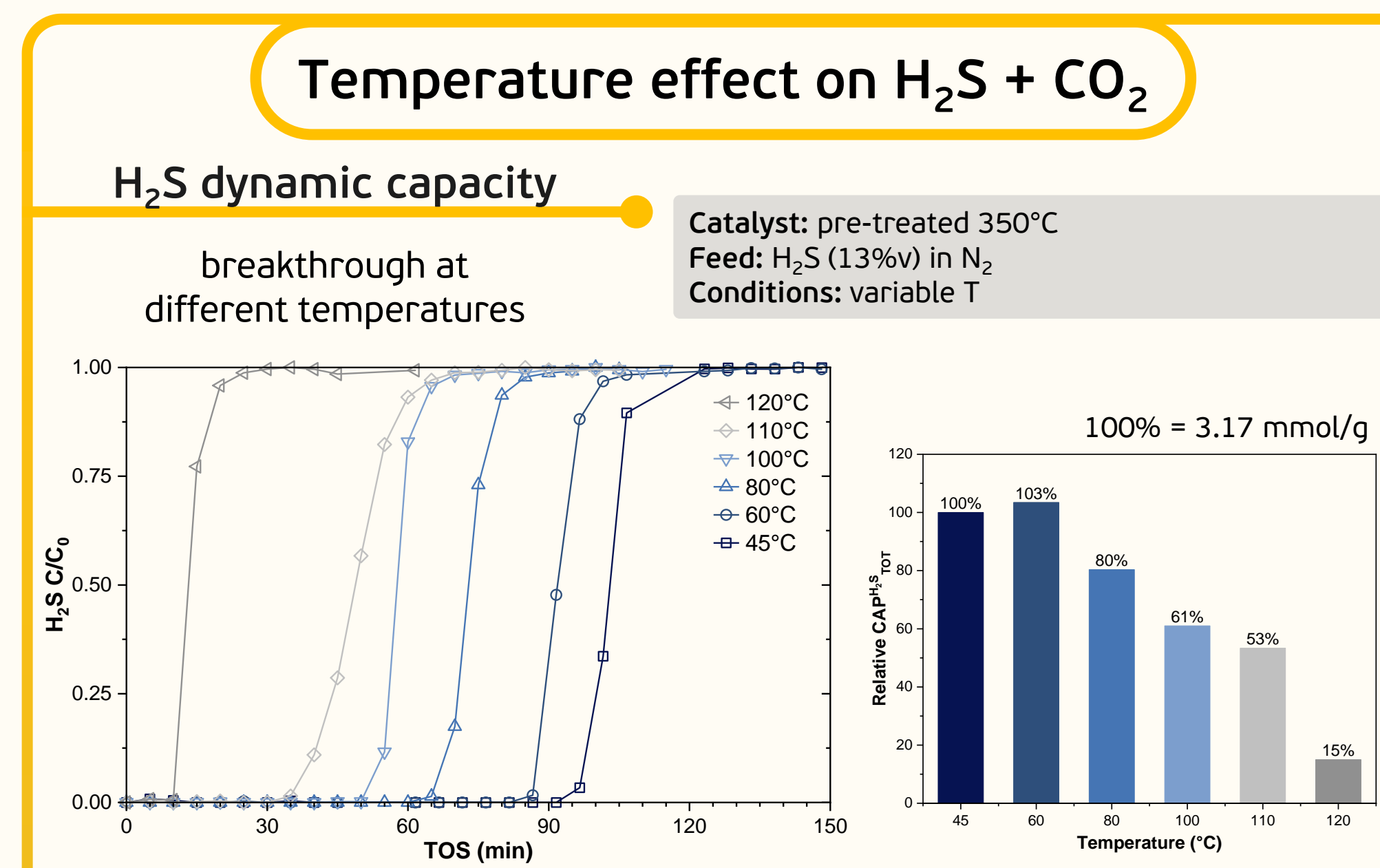
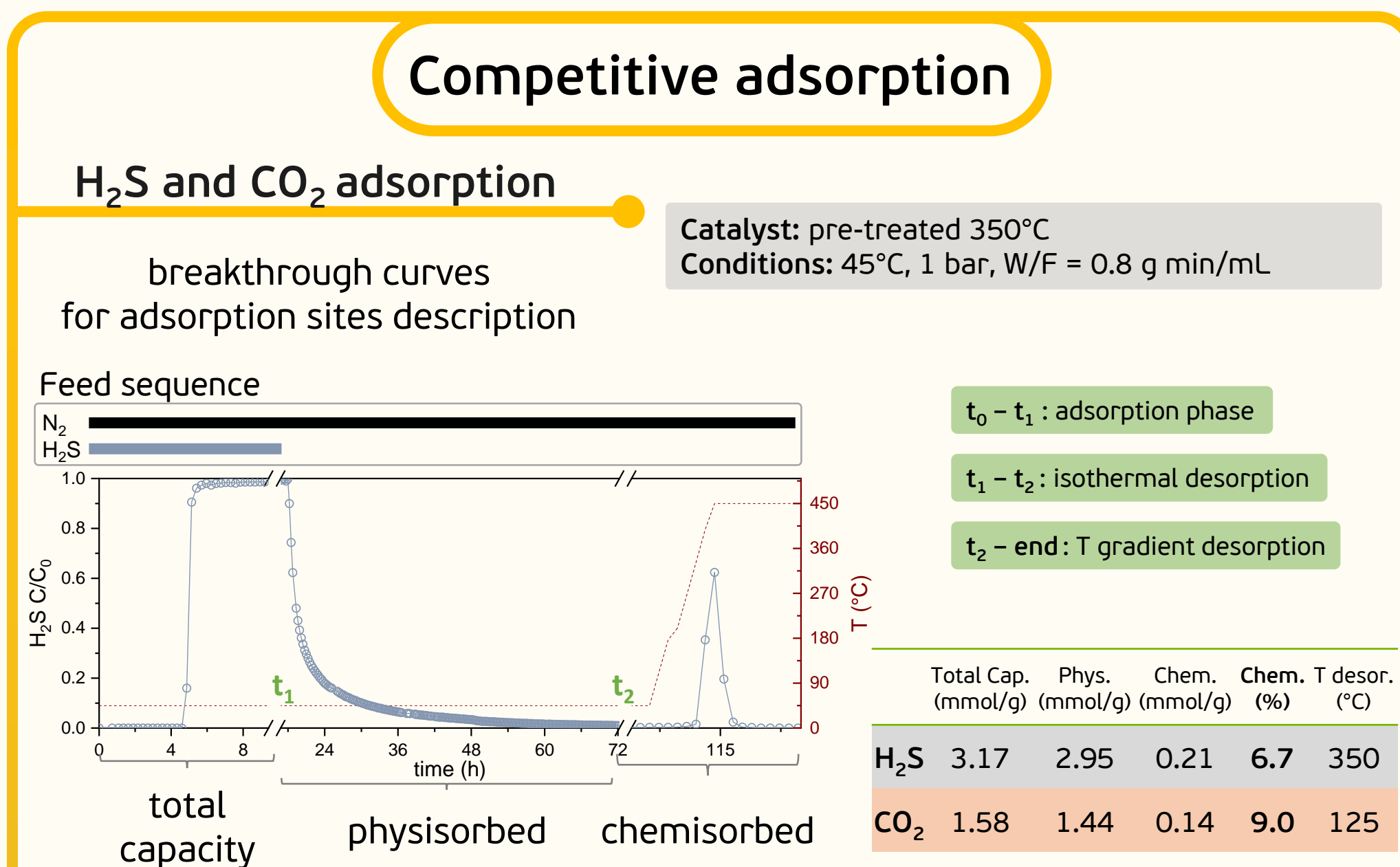
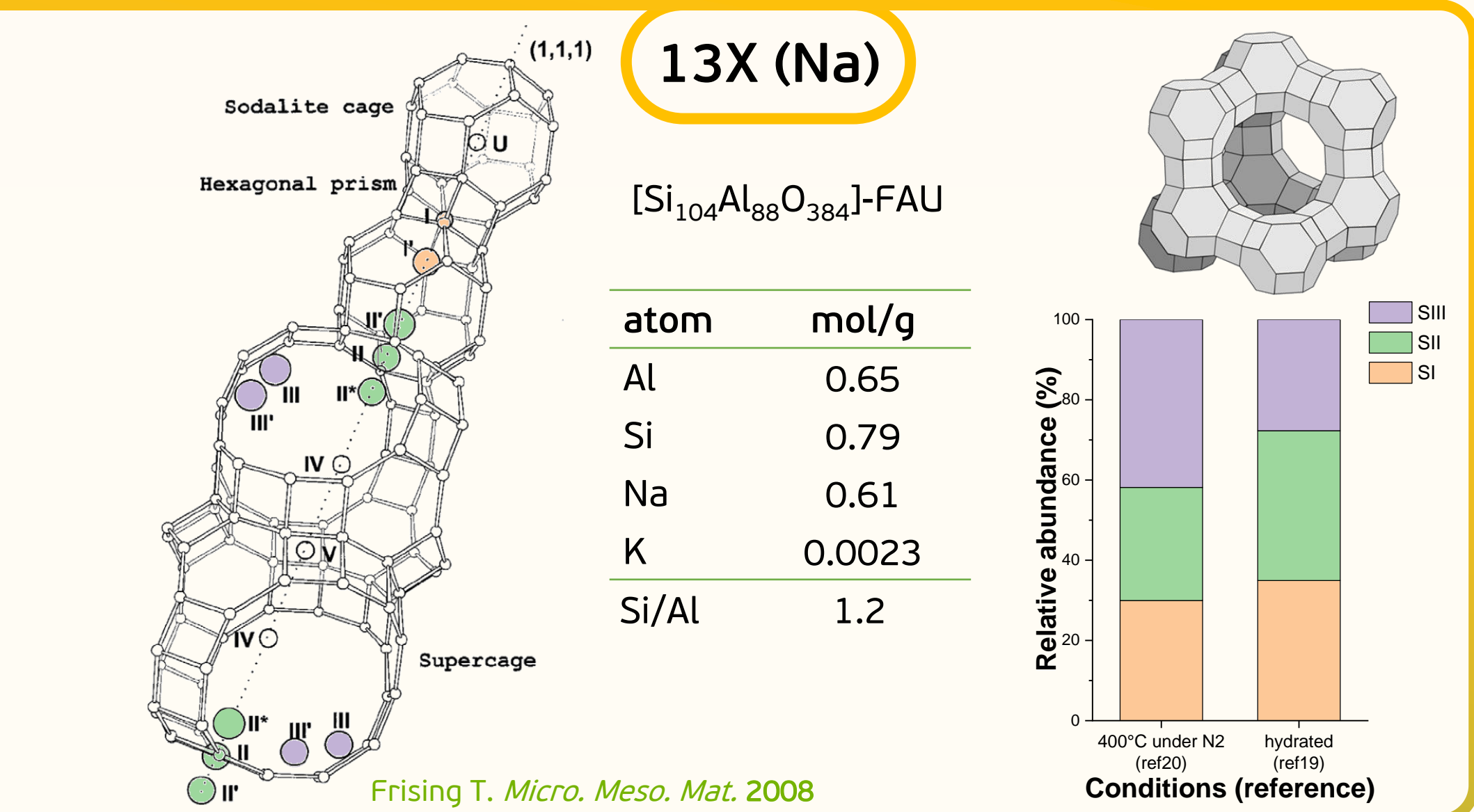
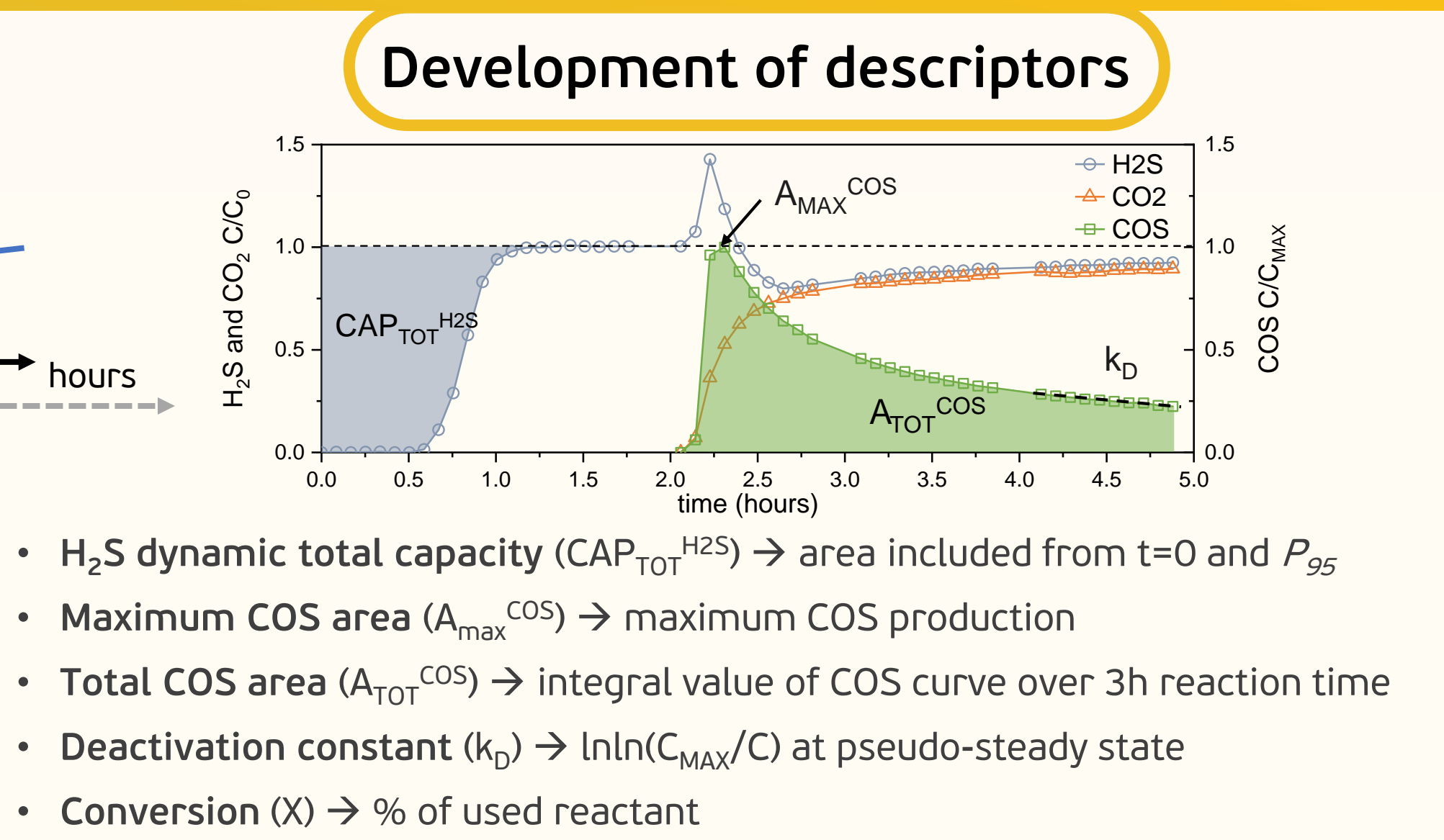
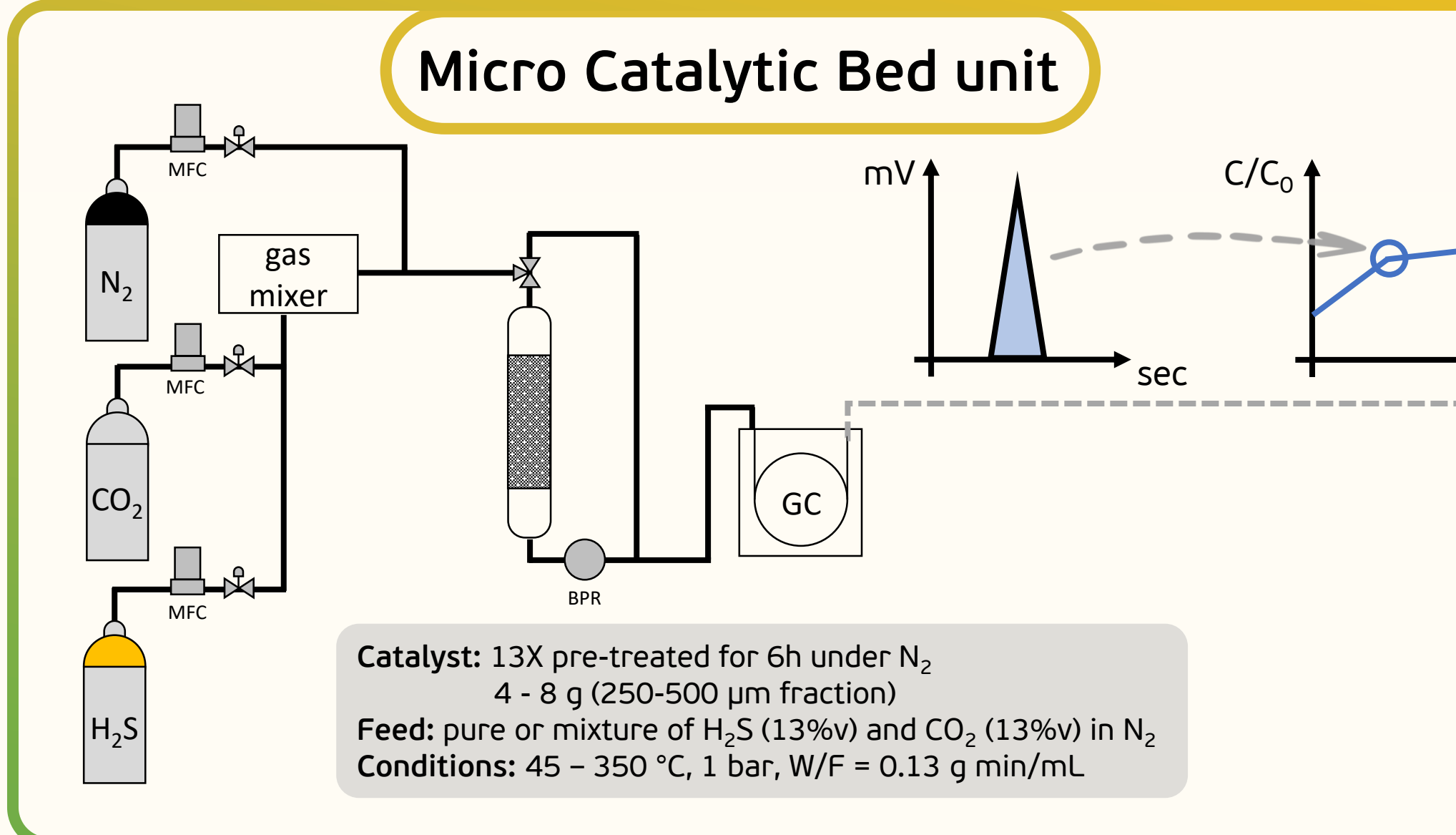
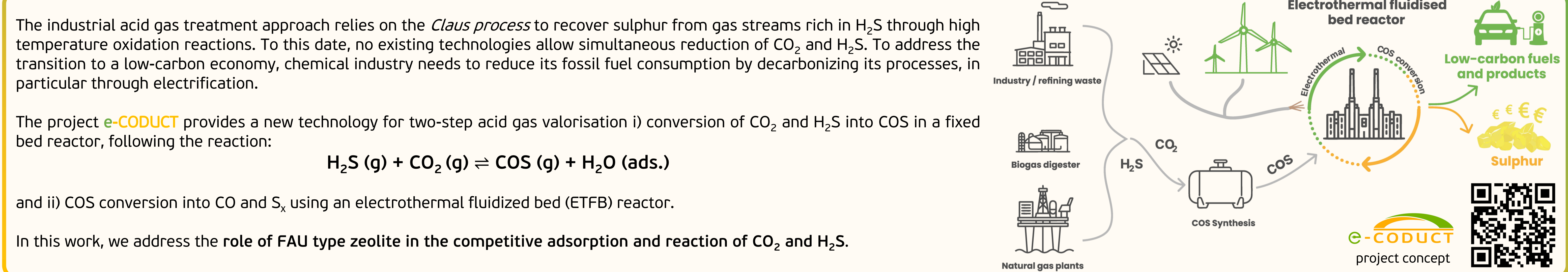


Alternative to Claus process through COS as intermediate: CO₂ and H₂S competitive adsorption and reaction on sodium zeolites

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- ### Single component adsorption and co-adsorption sequences
- Chemisorbed H₂S fraction is reactive towards COS formation.
 - Co-adsorption + reactivity: pseudo-steady state (5 - 10 % conversion).
 - H₂S pre-saturation allows understanding of concentration evolution.

- ### Temperature dependent variation of adsorption and reactivity
- Physisorbed H₂S variation has no influence on amount of produced COS.
 - Highest conversion at 100 - 110 °C.
 - Catalyst is slowly poisoned by water.

- ### Influence of hydration state towards adsorption and reactivity
- Thermal treatment cycles restore initial dehydration state → reactivity.
 - H₂S capacity mirror reflects water sites occupancy.
 - Progressive recovery of catalytic activity.