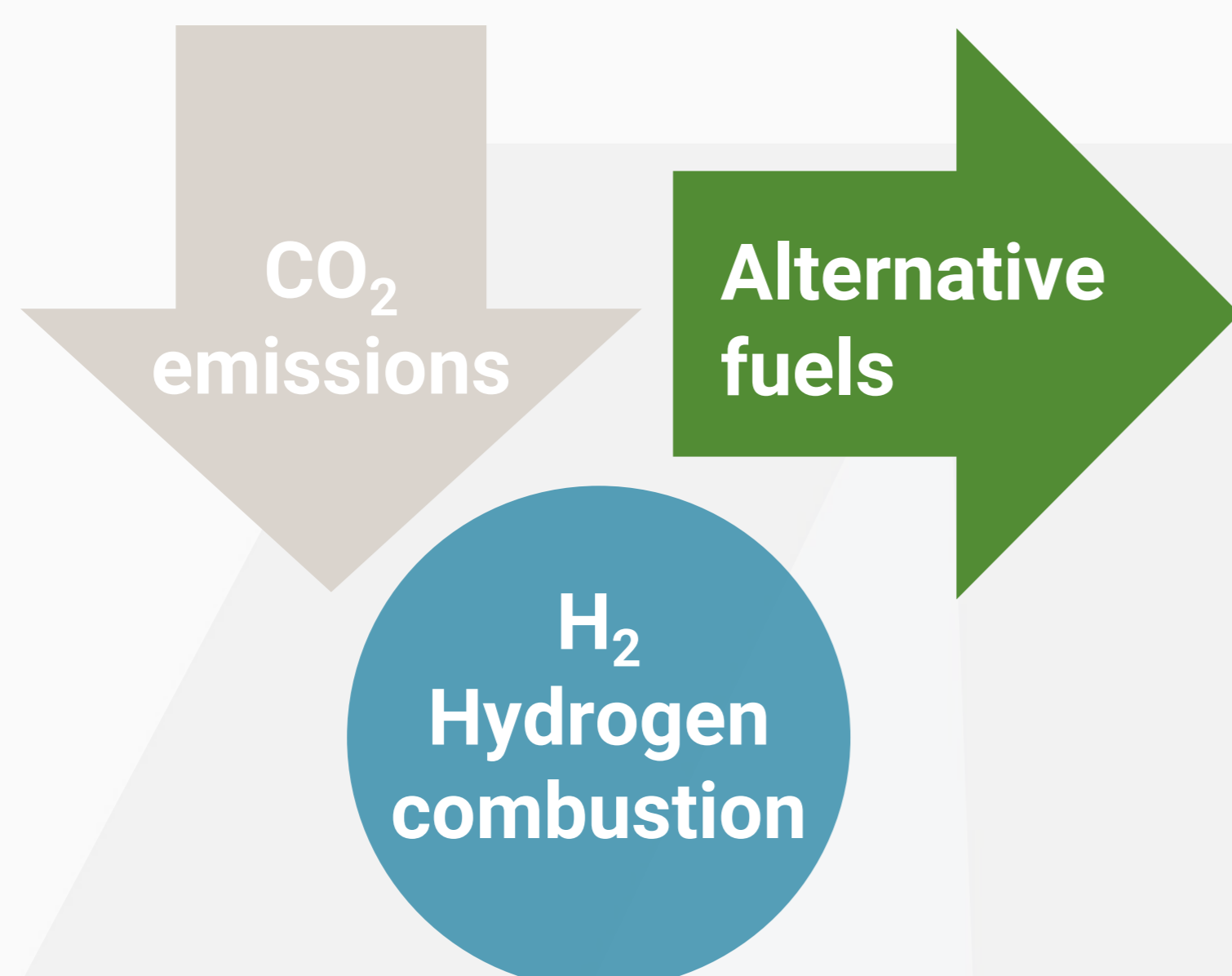
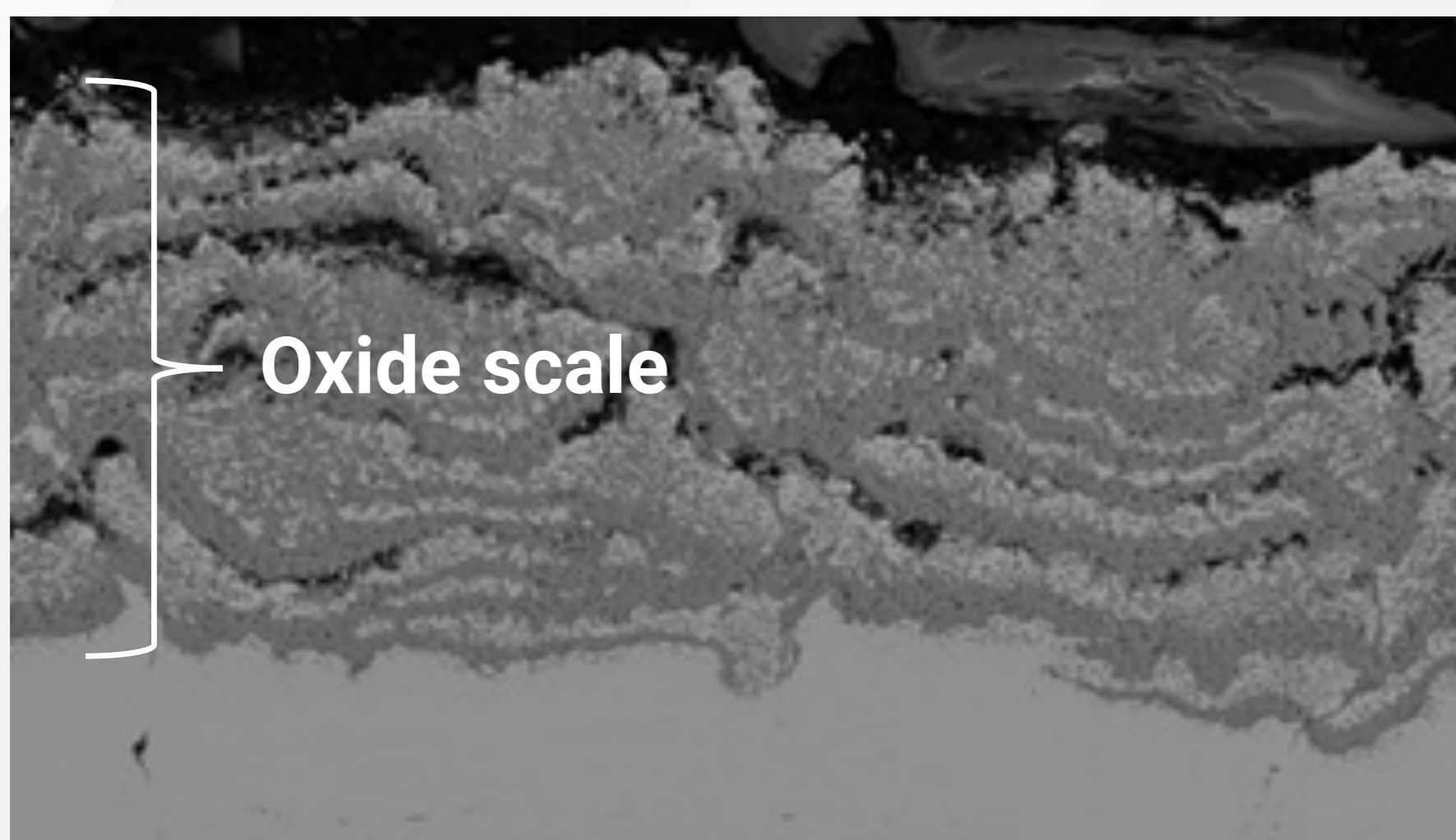


Hydrogen gas in high temperature process



- ▶ The energy required to initiate hydrogen combustion is much lower than that required for other common fuels
- ▶ Reaction-by product is H₂O



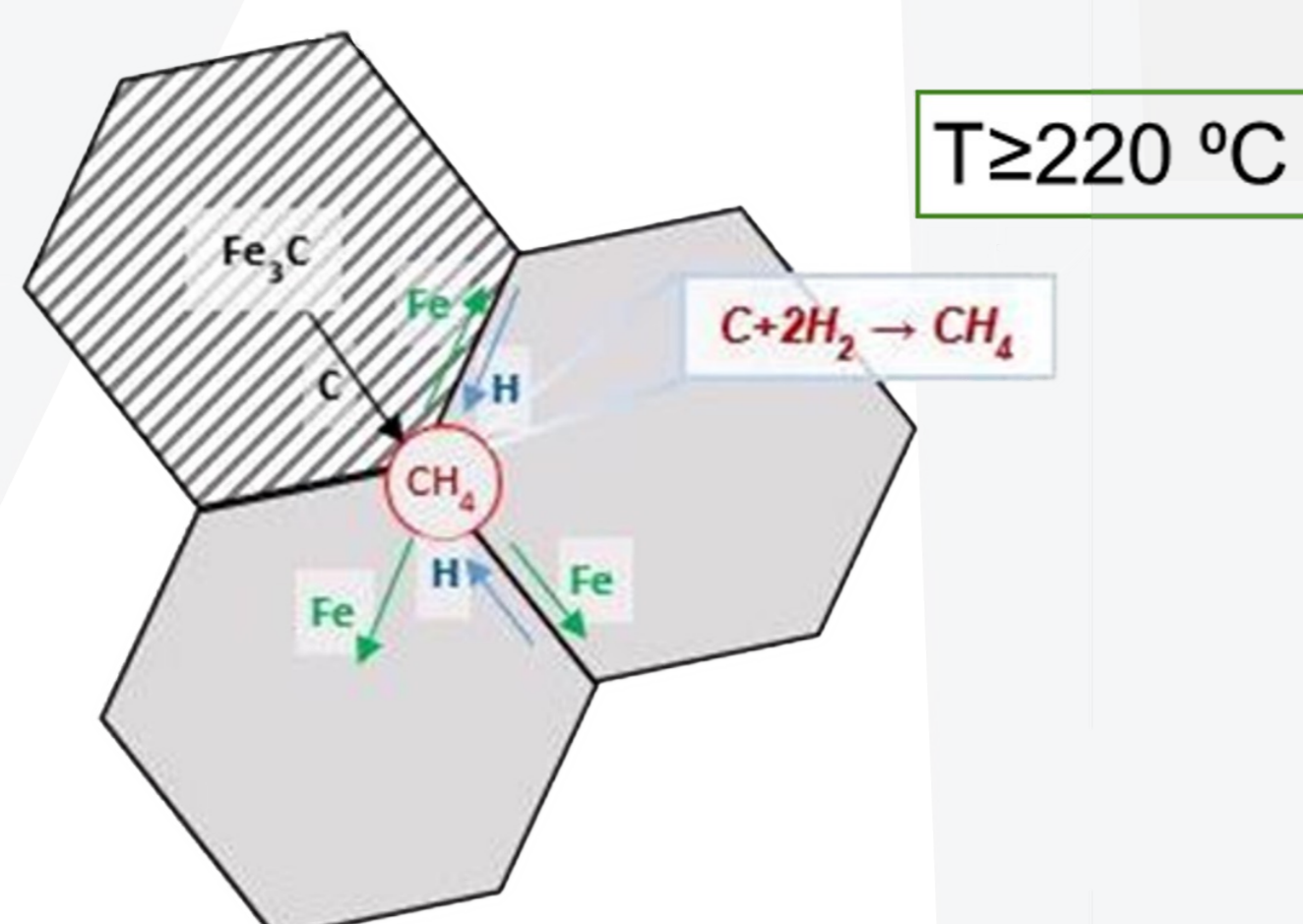
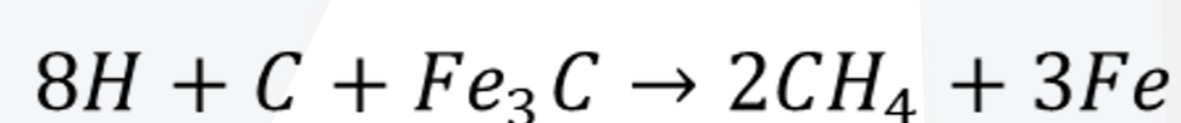
How detrimental can be for the metallic compounds and the product to use hydrogen combustion

- ▶ Volatile metal hydroxide formation
- ▶ Scale/gas interfacial processes
- ▶ Scale transport properties
- ▶ Void development in growing scales



How to evaluate the use of Hydrogen combustion in high temperature steel processes

- ▶ Oxidation behavior of materials in high H₂O levels at high temperature



High temperature hydrogen attack

- ▶ H₂ dissociation
- ▶ Hydrogen dissolves in steel
- ▶ Reaction with carbon
- ▶ Decarburisation (surface or internal)

