Bio-inspired Catalysts for CO$_2$ Reconversion

**Approach:** Apply the known enzyme structures & principles to build synthetic catalysts for CO$_2$ conversion

**Example:** Biomimetic catalysts for conversion of CO$_2$ to formic acid

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**Step 1**
Find an enzyme of interest (e.g., formate dehydrogenase for CO$_2$ conversion)

**Step 2**
Focus on the reaction site and learn how the enzyme converts CO$_2$ to formic acid

**Step 3**
Synthesize catalysts that mimic the enzyme’s CO$_2$ reduction chemistry

$M = \text{Mo, W}$  
$X = \text{O, S, Se}$

**Bio-inspired Synthetic Catalysts**