Carbon capture from seawater

Slide by Neil Goalby. Available from [rsc.li/3z3oD62](rsc.li/3z3oD62)

Oceans are large carbon sinks with much higher concentrations of CO_2 than in air. Researchers are using electrochemical cells to change the pH of seawater and convert dissolved bicarbonate ions into CO_2 that can then be collected. The water is then returned to its original pH before it is released back into the ocean.

Releasing CO_2 from ocean water can free up this seawater to can capture more CO_2 from the atmosphere. CO_2 can be used to produce fuels and materials, or the CO_2 can be stored underground in rock formations.

Using our acidic oceans to mitigate rising atmospheric CO_2

Questions

1. What environmental problem does carbon dioxide cause?
2. What is carbon capture?
3. Suggest why removing CO_2 from seawater could be easier than removing it from air.