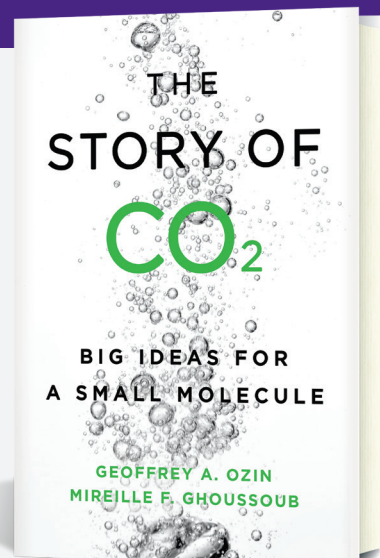


The Story of CO₂: Big Ideas for a Small Molecule

By Geoffrey A. Ozin and Mireille F. Ghossoub

The Story of CO₂ offers a positive contribution to the climate crisis debate by highlighting how we can utilize carbon dioxide as a resource.

The climate crisis requires that we drastically reduce carbon dioxide emissions across all sectors of society. *The Story of CO₂* contributes to this vital conversation by highlighting the cutting-edge science and emerging technologies – a number of which are already commercially available – that can transform carbon dioxide into a myriad of products.



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Discussion Guide Questions

1. Were you familiar with “carbon utilization” before reading *The Story of CO₂*? If so, have your thoughts on carbon utilization technologies changed?
2. One of the challenges in understanding the urgency of climate change is that we cannot “see” it. How can individuals or communities become more engaged and invested in the parts of the industrial and energy infrastructure that are not directly visible to them?
3. Were you surprised to learn that many of the chemicals and petrochemicals currently made from fossil fuels could be made from CO₂? Knowing this information, do you think it is possible for our energy and industrial infrastructure to operate without fossil fuels?
4. Do you see value in understanding the science behind global warming? Do you think that understanding the minute physical phenomena behind climate change (e.g., adsorption of infrared radiation by greenhouse gases) changes one’s perspective on climate change?
5. Do you think that geoengineering will be necessary to ensure that global temperature does not rise above 2°C? What are your biggest concerns with geoengineering?
6. Would you be more inclined to purchase products if they were labelled “certified fossil-free” or “made from CO₂ emissions”? How can consumers help to pressure industries to decarbonize their products?
7. The book illustrates many possibilities for transforming CO₂ into value-added products (e.g., methanol) or integrating it into existing processes (e.g., cement). Can we consider CO₂ to be a resource? Are the terms “resource” and “waste” at all meaningful in the context of a truly circular economy in which all material is re-used and recycled?

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8. Enhanced oil recovery (EOR) can reduce the carbon footprint of oil production, but should it be considered a climate-friendly technology? Discuss whether EOR has a role to play in the transition towards a net-zero emissions future.

9. There is more than enough capacity to store our excess carbon emissions underground through geological storage. Underground storage is considered to be a safe way of sequestering carbon in the long term, provided that a site has the appropriate geology and is continuously monitored. Suppose a company is vying to develop a geological sequestration project that would extend to rock located under your home or community. Would you have any concerns about the project? What questions would you want to ask the project engineers and geologists?

10. Technological solutions to mitigating emissions are only as effective as their implementation. Even if our entire energy and industrial infrastructure could be changed from fossil-based to renewable-based overnight, what other changes would you like to see in how these industries operate (e.g., changes in governance, mechanisms for environmental accountability, degree of community involvement)?

11. Is the challenge of reducing greenhouse gas emissions an educational, technological, economic, or political problem – or a combination of some or all of these?

12. Did any of the ideas presented in the book change your belief in the possibility of a future free of fossil fuels?