

“Ocean acidification: another CO₂-induced environmental problem ”

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Since the start of industrial revolution, human activities have released more than 500 PgC (1PgC = 10^{15} gC) CO₂ into the atmosphere. About one half of the CO₂ released is absorbed by the ocean and the terrestrial biosphere, and the other half accumulates in the atmosphere, causing global warming. The ocean's uptake of anthropogenic CO₂, currently at a rate of about 2 PgC per year, mitigates the amount of CO₂ in the atmosphere and global warming. On the other hand, the ocean's absorption of anthropogenic CO₂ increases ocean's acidity (decreases pH), a phenomena known as ocean acidification. A changing ocean chemistry has far-reaching effect on the marine organisms and ecosystems. This talk, starting from a global perspective of the carbon cycle and global warming, will provide an overview our current understanding of ocean acidification, including basic facts and concepts of ocean acidification, its effect on the marine biota, present-day observation, and future projection of ocean acidification.