BOOK REVIEWS

New Books Received


Application of Biotechnology to Mitigation of Global Warming: Proceedings of the St. Michaels II Workshop, April 2003


The rapid increase in atmospheric concentrations of greenhouse gases (GHGs) with the global warming has increased scientific and public interest in identifying mitigation options. Two principal strategies include (i) reducing emissions or preventative measures and (ii) sequestering emissions or adaptive measures. Reducing emissions involves improving energy use efficiency and finding alternatives to fossil fuel. Sequestration involves capturing and storing CO2 through geologic and oceanic sequestration. CO2 is removed from the atmosphere by photosynthesis and sequestered in biomass, wood products, and soils, and then injected into geologic strata (old coal mines, oil wells, or saline aquifers) or the ocean. In contrast to geologic and oceanic sequestration, biotechnological options are based on engineering techniques, biological processes, and the use of biotic options. Engineering techniques rely on capturing emissions at the smokestack or tailpipe, purifying CO2, compressing it, transporting it, and then injecting it into geologic strata. Biotechnological options are the most cost-effective option. This volume with focus on biological and biogeochemical systems functions. Being a natural process, biotechnology has little or no adverse ecological effects. Biotechnology is second in the series of workshops organized by the Pacific Northwest Laboratory (PNNL).


The purpose of this 10-chapter volume is to provide a comprehensive overview of the state of knowledge regarding carbon sequestration in soils...