

## **Abstract**

**Title: Innovative and efficient algae based system to reduce carbon dioxide emissions: A possible remedy to climate change**

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**Keywords:** Climate change, carbon dioxide, algae, Biofuels

### **Abstract:**

Changing global environment has resulted in alarming level global warming. There is an essential need to sequester carbon dioxide to save our environment and reduce effect of carbon dioxide on global warming. Various sequestration approaches including physical and biological options. Physical approaches have their own disadvantages including high costs and energy requirements etc. Biological means provide an alternative solution to physical methods. Usage of algae for carbon dioxide fixation has numerous benefits such as mitigation of carbon dioxide with simultaneous production of biofuels and other secondary metabolites. Carbon dioxide is fixed by green algae and cyanobacteria into sugar using light and water as source of energy and electron, respectively. This multistep photosynthetic reaction is main hypothesis behind current research plan.

### **Objectives:**

1. Screening and selection of algal species having high carbon dioxide fixation efficiency
2. Carbon dioxide fixation using this clean technology for biological carbon assimilation in algal culture under controlled indoor conditions
3. Comparative evaluation of carbon fixation in semi outdoor and indoor environment