**Appendix S1**

**Growth studies on *Anabaena* sp. ATCC 33047**

**Material and Method:** *Anabaena* sp. ATCC 33047 cells were grown in ASP2 medium lacking any source of fixed nitrogen in a Multi-Cultivator MC 1000-OD device (Photon Systems Instruments, Drasov, Czech Republic) under continuous light (LED light source). Cells were grown at 42°C in ambient air supplemented with 3% CO2 under light intensities 500 and 1500 μmol photons m-2s-1. Growth was monitored by measuring optical density at 730nm.

**Results and Discussion**



**Figure S1:** Growth of Anabaena 33047 under different light intensities.

The growth of *Anabaena* sp. ATCC 33047 was studied under nitrogen fixing condition under two different light intensities. It was observed that the organism showed the shortest doubling time of 3.8 ± 0.4 h-1 when grown under a light of 1500 μmol photons m-1s-1. This is one of the shortest reported for diazotrophic cyanobacteria under N2-fixing conditions.