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*Supplement of*

**Effects of ultraviolet radiation on photosynthetic performance and N<sub>2</sub> fixation in *Trichodesmium erythraeum* IMS 101**

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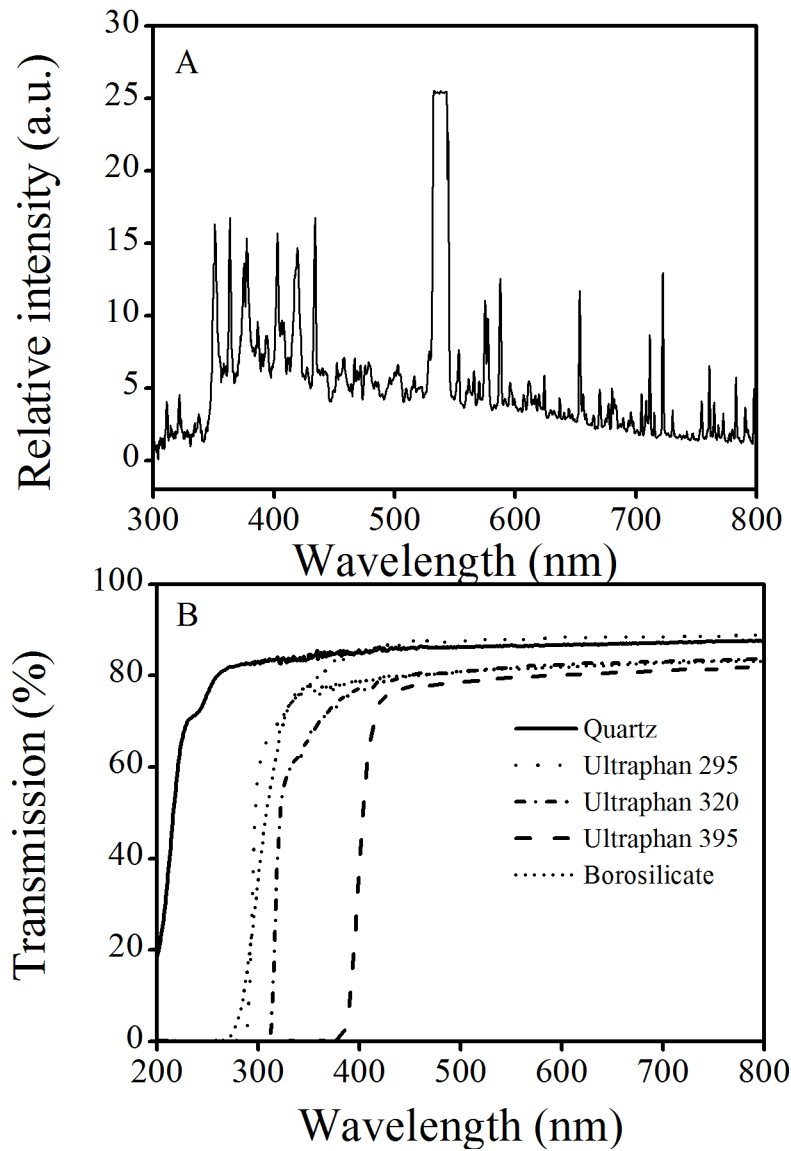


Fig.S1 (A) The spectral output of the solar simulator which was used in the short-term UV experiment. (B) The transmission spectra of quartz, borosilicate and three kinds of filter foils (Ultraphan-295, Ultraphan-320 and Ultraphan-395) which were used in this study.

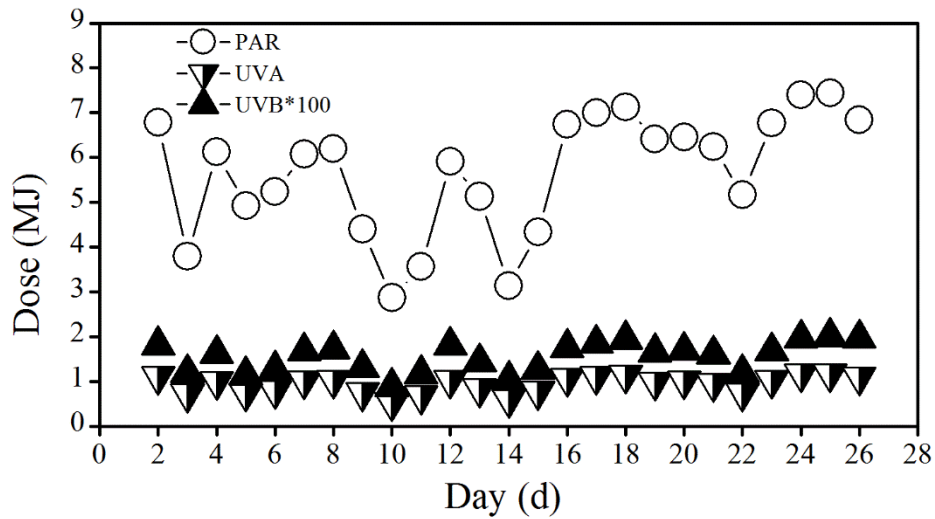


Fig. S2 The daily doses of solar PAR (400-700 nm), UVA (320-400 nm) and UVB (295-320 nm) during the experiments (2014.1.1-1.26, Xiamen).

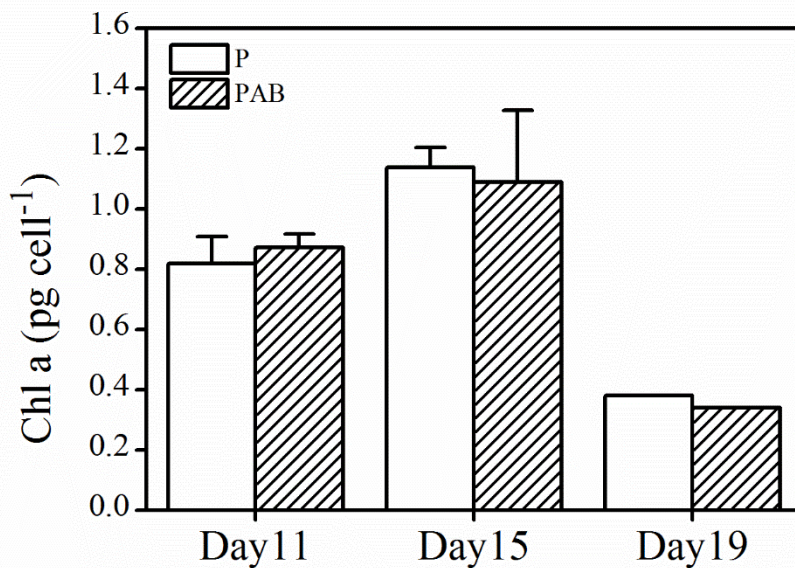


Fig. S3 Chl *a* concentration of *Trichodesmium* IMS101 grown under solar PAR (P) and PAR+UVA+UVB (PAB). The total daily solar doses of Day11, Day15 and Day19 were 3.56, 4.33, 6.41 MJ, respectively. There are no significant difference between P and PAB treatments ( $p>0.05$ ). Values are the mean  $\pm$ SD, triplicate cultures. (Note: Samples collected in the 19<sup>th</sup> day, lost replicates,  $n=1$ ).

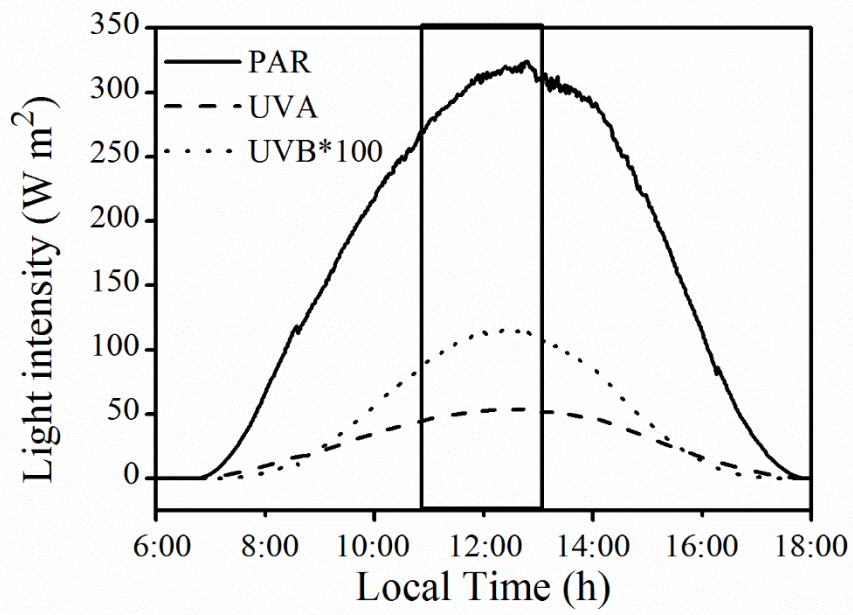


Fig. S4 Diel changes of solar radiation ( $\text{W m}^{-2}$ ) on Jan 17<sup>th</sup> 2014 (the 18<sup>th</sup> day of the experiment) in Xiamen. Carbon fixation and  $\text{N}_2$  fixation were measured during 11:00~13:00.