# **Accepted Manuscript**

Astrobiological implications of dim light phototrophy in deep-sea red clays

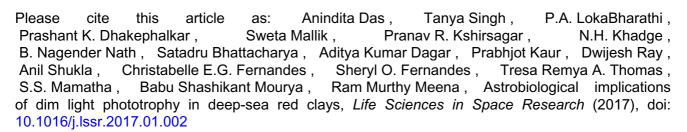
Anindita Das, Tanya Singh, P.A. LokaBharathi, Prashant K. Dhakephalkar, Sweta Mallik, Pranav R. Kshirsagar, N.H. Khadge, B. Nagender Nath, Satadru Bhattacharya, Aditya Kumar Dagar, Prabhjot Kaur, Dwijesh Ray, Anil Shukla, Christabelle E.G. Fernandes, Sheryl O. Fernandes, Tresa Remya A. Thomas, S.S. Mamatha, Babu Shashikant Mourya, Ram Murthy Meena



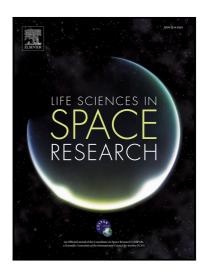
Reference: LSSR 118

To appear in: Life Sciences in Space Research

Received date: 4 July 2016 Accepted date: 20 January 2017



This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



### ACCEPTED MANUSCRIPT

## **HIGHLIGHTS**

- Aerobic anoxygenic phototrophs (AAP) dominated dark abyssal red clay TVBC-08, that are hydrothermally altered.
- Purple/green sulphur bacterial enrichments indicate an active S-cycle in CIB red clays.
- Anaerobic chemolithotrophy followed by anoxygenic phototrophy lead to oxygenic photoautotrophy during hydrothermal cooling.
- Hydrothermal emissions promote photoautotrophy. These emissions include chemiluminiscence by sulphide nano-clusters.
- These could be some of the lowest photosynthetic limits on Earth and are astrobiological significant for Mars and beyond.

### Download English Version:

# https://daneshyari.com/en/article/5498095

Download Persian Version:

https://daneshyari.com/article/5498095

<u>Daneshyari.com</u>