

**Effects of light emitting diode (LED) illumination on  
viability of microorganisms**

Submitted in partial fulfilment of the requirements  
of the degree of

**Master of Science in Life Science (Applied Medical Sciences)**

by

**Fatema Safri**

**(UID No.: 188513)**

**Guided by:**

**Dr. Binoj C. Kutty**



**Department of Life Science & Biochemistry  
St. Xavier's College (Autonomous), Mumbai  
June 2020**



DEPARTMENT OF LIFE SCIENCE & BIOCHEMISTRY  
ST. XAVIER'S COLLEGE (AUTONOMOUS), MUMBAI  
MUMBAI - 400 001



## CERTIFICATE

Class: M.Sc. (Part II) – Life Science

UID NO.: 188513

This is to certify that the project entitled "Effects of light emitting diode (LED) illumination on viability of microorganisms" is a result of the original research work carried out by Ms. Fatema Safri

This project is submitted to the Department of Life Science & Biochemistry, St. Xavier's College (Autonomous), Mumbai, in partial fulfilment for the degree of **Master of Science (M.Sc.) - Life Science (Applied Medical Sciences)** for the year 2019-20.

**Dr. Binoj. C. Kutty**  
Research Advisor

**Head of Department**  
Life Science and Biochemistry

Date: 27<sup>th</sup> June 2020

Place: Mumbai

DEPARTMENT OF LIFE SCIENCE  
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## DECLARATION

Class: **M.Sc. (Part II) – Life Science**

UID NO.: **188513**

I declare that this dissertation entitled "*Effect of Light Emitting Diode (LED) on the viability of the Microorganisms*" has been written by me and no part of it has been plagiarized from any other source. The literature has been cited in-text and in the reference list. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my dissertation. I understand that any violation of the above will be the cause for disciplinary action by the College and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed. The entire work or any part of it thereof, will not be published without the permission and consent of my research guide.



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Signature

Name of student: **Ms. Fatema Safri**

Date: **27<sup>th</sup> June, 2020**

Place: **Mumbai**