



A  
**PROJECT REPORT**  
on  
**Green synthesis of cerium oxide nanoparticles by  
*Bryophyllum pinnatum* leaves extract for Anti-biofilm  
activity**

By  
**KADAM SWAPNALI SURESH**

Under the Guidance of  
**Dr. A.B Gawande**  
**Material Research Laboratory**  
**Department of Physics**

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**2022-2023**

## Certificate


This is to certify that the project entitled  
“Green synthesis of cerium oxide nanoparticles by  
*Bryophyllum pinnatum* leaves extract for Anti-  
biofilm activity

has been successfully completed by

**KADAM SWAPNALI SURESH**

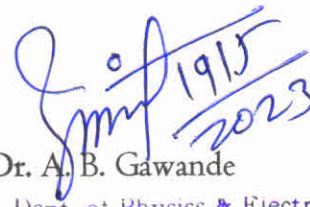
Seat no:- \_\_\_\_\_

During the academic year 2021-22 for fulfilment of  
M.Sc-II (Physics) degree

  
Dr. A. B. Gawande  
(Project Guide)

  
Internal Examiner



  
Dr. A. B. Gawande  
Head, Dept. of Physics & Electronics  
Arts, Science & Commerce College,  
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External Examiner  
