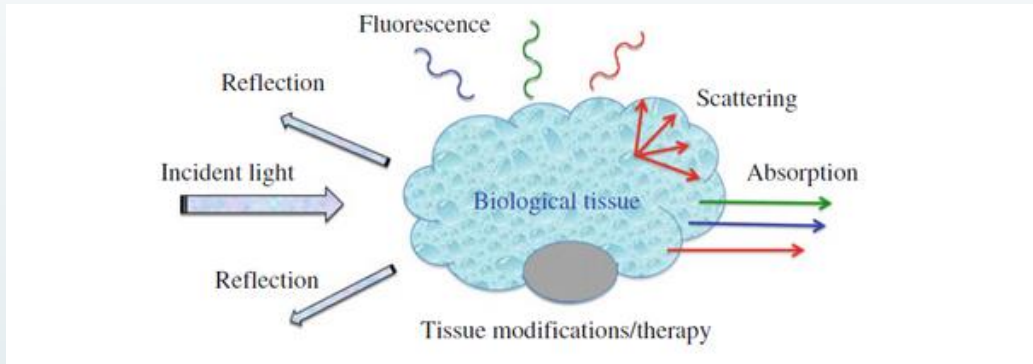


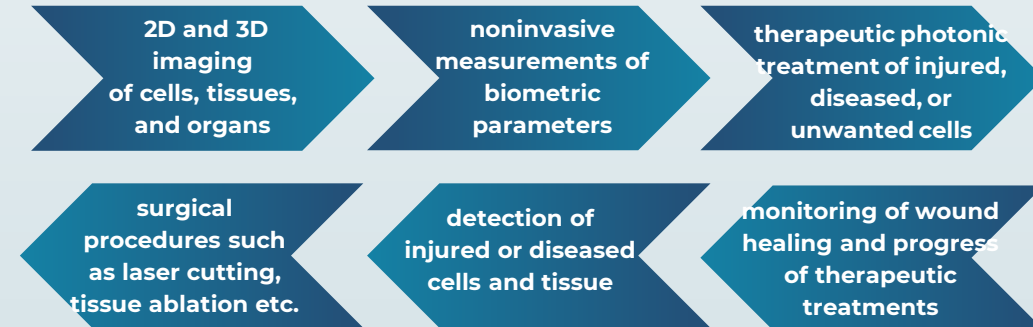
APPLICATIONS OF BIOPHOTONIC INNOVATIONS IN DENTISTRY

INTRODUCTION

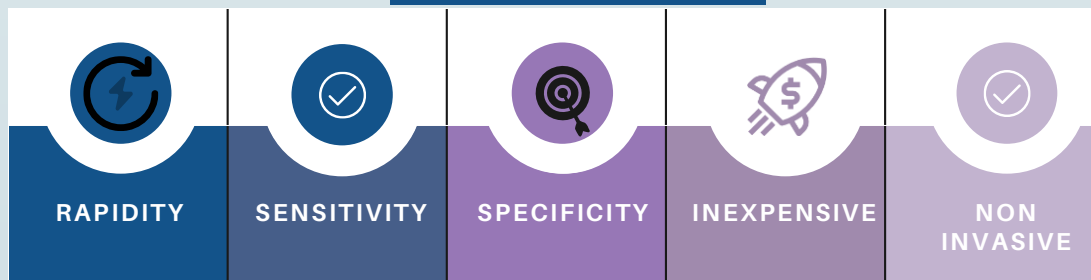
Biophotonics refers to the detection, reflection, emission, modification, absorption, creation, and manipulation of photons as they interact with biological cells, organisms, molecules, tissues, and substances, supported by optical fibers, optical sources and photodetectors, test and measurement instrumentation, nanotechnology, microscopy, spectroscopy, and miniaturization methodologies.



APPLICATIONS:

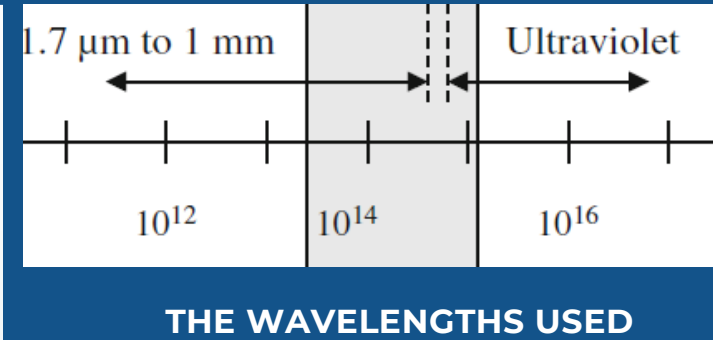


ADVANTAGES:

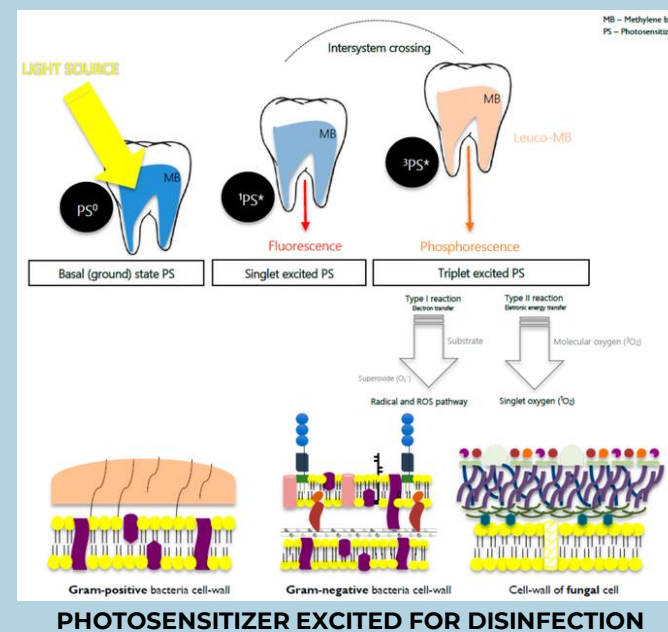


REFERENCE:

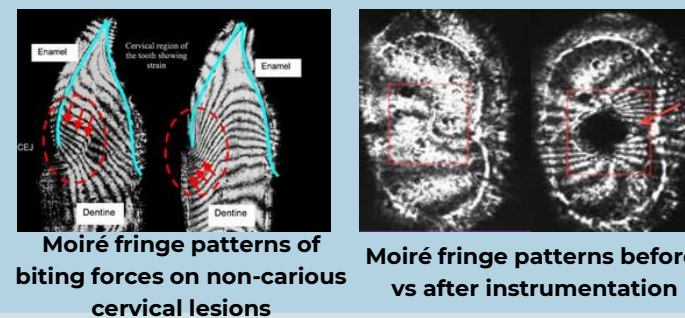
1. Daghigh Ahmadi E, Hafeji S, Khurshid Z, Imran E, Zafar MS, Saeinasab M, Sefat F. Biophotonics in dentistry. Applied Sciences. 2022 Apr 22;12(9):4254.
2. Keiser G, Keiser G. Overview of Biophotonics. Biophotonics: Concepts to Applications. 2016:1-23.
3. Lim H, Li FC, Friedman S, Kishen A. Residual microstrain in root dentin after canal instrumentation measured with digital moiré interferometry. Journal of endodontics. 2016 Sep 1;42(9):1397-402.
4. van Soest G, Shemesh H, Wu MK, Van der Sluis LW, Wesselink PR. Optical coherence tomography for endodontic imaging. In Lasers in Dentistry XIV 2008 Feb 11 (Vol. 6843, pp. 96-103). SPIE.



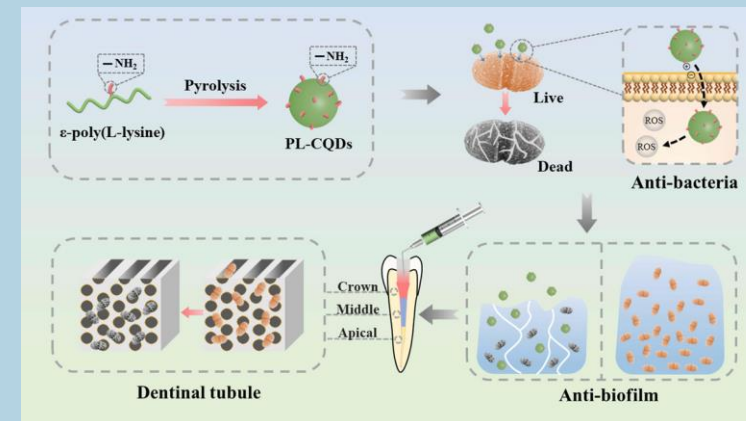
PHOTODYNAMIC THERAPY



INTERFEROMETRY

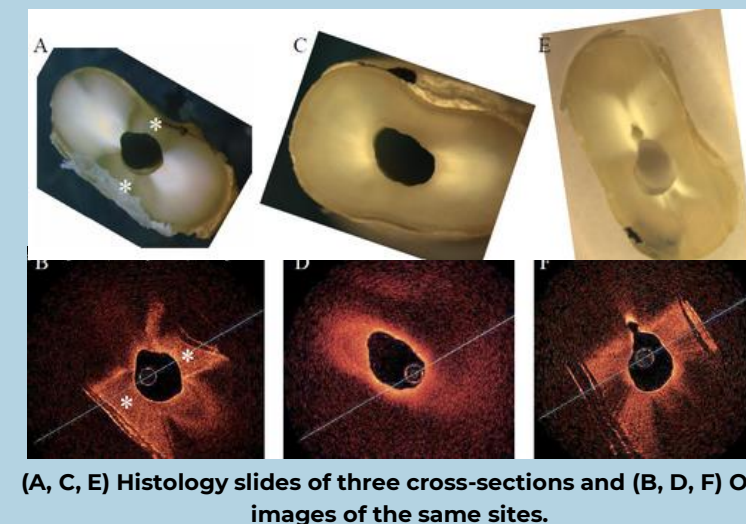
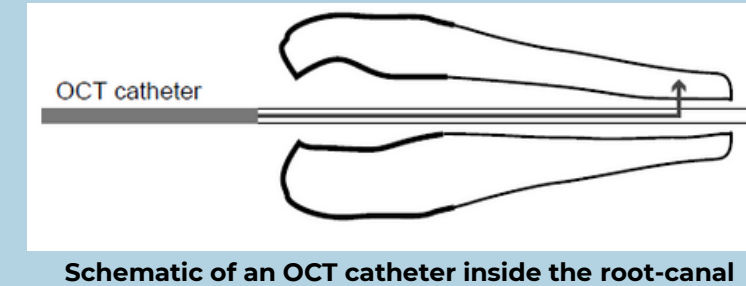


QUANTUM DOTS

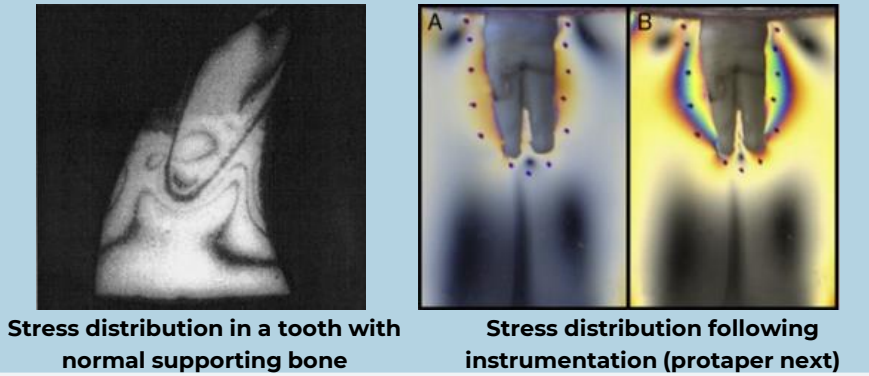


Poly lysine carbon quantum dots used as a root canal flushing agent to study its inhibitory effect on *E. faecalis* and their biofilms

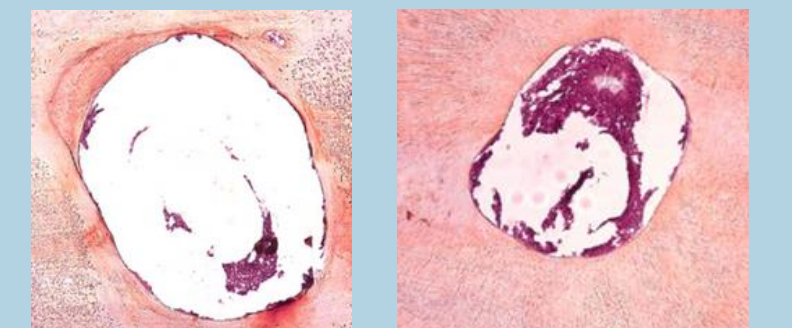
OPTICAL COHERENCE TOMOGRAPHY



PHOTOELASTICITY



PHOTOACOUSTIC IMAGING



bacteria/biofilm after irrigation with PIPS-activated NaOCl (A) and ultrasonically activated NaOCl (B) after photon-initiated photoacoustic streaming

PHOTOBIMODULATION

