

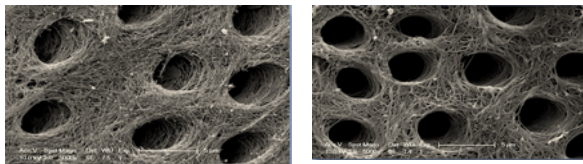
# TRANSFORMING DENTAL CARE: THE FUTURE OF ADHESIVES WITH QARF TECHNOLOGY

A/PROF DR UMER DAOOD



## AT A GLANCE

Introducing our cutting-edge dental adhesive featuring Quaternary Ammonium Compound with Riboflavin (QARF) Technology—a revolutionary approach to overcoming traditional adhesive challenges.



BEFORE

AFTER

## CHALLENGES

Dental adhesives face critical challenges impacting clinical outcomes. Microbial Contamination persists, as traditional adhesives often fail to prevent bacterial growth, leading to restoration failure and secondary caries. Collagen Degradation due to matrix metalloproteinases (MMPs) compromises bond longevity, causing early bond failure. Bond Strength Variability affects the reliability of restorations, resulting in inconsistent results. Additionally, Cytotoxicity Concerns arise as some adhesives may harm pulp cells, jeopardizing patient safety.

## THE INNOVATION

This advanced technology integrates:

- **Antimicrobial Properties:** The QARF compound significantly reduces microbial biofilm growth, enhancing oral health and extending the lifespan of dental restorations.
- **Anti-Proteolytic Function:** QARF inhibits matrix metalloproteinases (MMPs), preventing collagen degradation and ensuring durable bond strength.
- **Enhanced Bond Strength:** The adhesive maintains high bond strength even under rigorous conditions, providing a reliable and durable solution for dental restorations.
- **Biocompatibility:** The formulation is designed to be non-cytotoxic, ensuring safety for pulp and surrounding biological tissues.
- **Efficient Polymerization:** Utilizes a safe blue dental light for activation, replacing UVA and ensuring a controlled and efficient curing process.

## THE OPPORTUNITY

- QARF-based adhesives can capture substantial market share within the bonding agents segment, particularly in restorative and cosmetic applications.
- According to the Orthodontics statistics by Johnson Elite Ortho, in December 2020, The American Dental Association reported that 70% of orthodontic brackets placed are on females, and they are largely for aesthetic purposes.

### Global Dental Adhesives Market

