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REVIEWER'S REPORT

Manuscript No.: IJAR-51052 Date: 15-04-2025

Title: Smart Materials in Dentistry: Pioneering the Future of Oral Healthcare

Recommendation:
Accept as it is……**YES……**
Accept after minor revision……
Accept after major revision ……
Do not accept (*Reasons below*) ……

Rating	Excel.	Good	Fair	Poor
Originality	√			
Techn. Quality		√		
Clarity		√		
Significance			√	

Reviewer's Name: Dr Aamina

Reviewer's Decision about Paper: **Recommended for Publication.**

Comments (*Use additional pages, if required*)
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Reviewer's Comment / Report

Introduction Review:

The introduction provides a clear and compelling context for the importance of human teeth in both function and aesthetics. It effectively sets the stage for discussing the limitations of tooth regeneration and the need for restorative dental materials. The historical perspective on dental materials transitioning from inert to bioactive and then to smart materials is well-articulated. The distinction between bioinert, bioactive, and bioresponsive materials introduces the reader to the evolving landscape of dental material science. The explanation of "smart materials" and their characteristics, such as the ability to alter their properties in response to environmental stimuli, is concise and informative.

Material Classification Review:

The categorization of smart materials into passive and active types is clearly presented. The differentiation between passive materials (such as Glass Ionomer Cements and Resin-Modified Glass Ionomer) and active materials (such as Smart GIC, Smart composites, and Shape Memory Alloys) helps to clarify the range of smart materials available in dentistry. The use of specific examples of both passive

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and active materials enhances the reader's understanding of how these materials function in dental practice. The mention of specific applications, including orthodontics, restorative care, pediatric dentistry, and laser dentistry, demonstrates the wide-ranging impact of smart materials across different dental fields.

Technological Context Review:

The text highlights the innovative nature of smart materials in dentistry, noting that these materials have contributed to significant improvements in dental procedures. The examples of materials that release fluoride or have self-repairing characteristics illustrate the practical benefits these materials offer to both dental professionals and patients. The mention of advanced materials, such as Amorphous Calcium Phosphate-releasing sealants and smart coatings for dental implants, further underscores the breadth of innovation in the field.

Conclusion Review:

While the conclusion is not explicitly stated, the summary of smart materials and their impact on various areas of dentistry provides a satisfying wrap-up. The final section successfully highlights how these materials have revolutionized different branches of dentistry, making procedures more efficient and effective. The overall tone is forward-thinking, suggesting the potential for further advancements in smart dental materials to continue improving patient care and treatment outcomes.