



FACULTY OF DENTAL MEDICINE UNIVERSITAS AIRLANGGA



INTERNATIONAL MEETING

The **3rd**

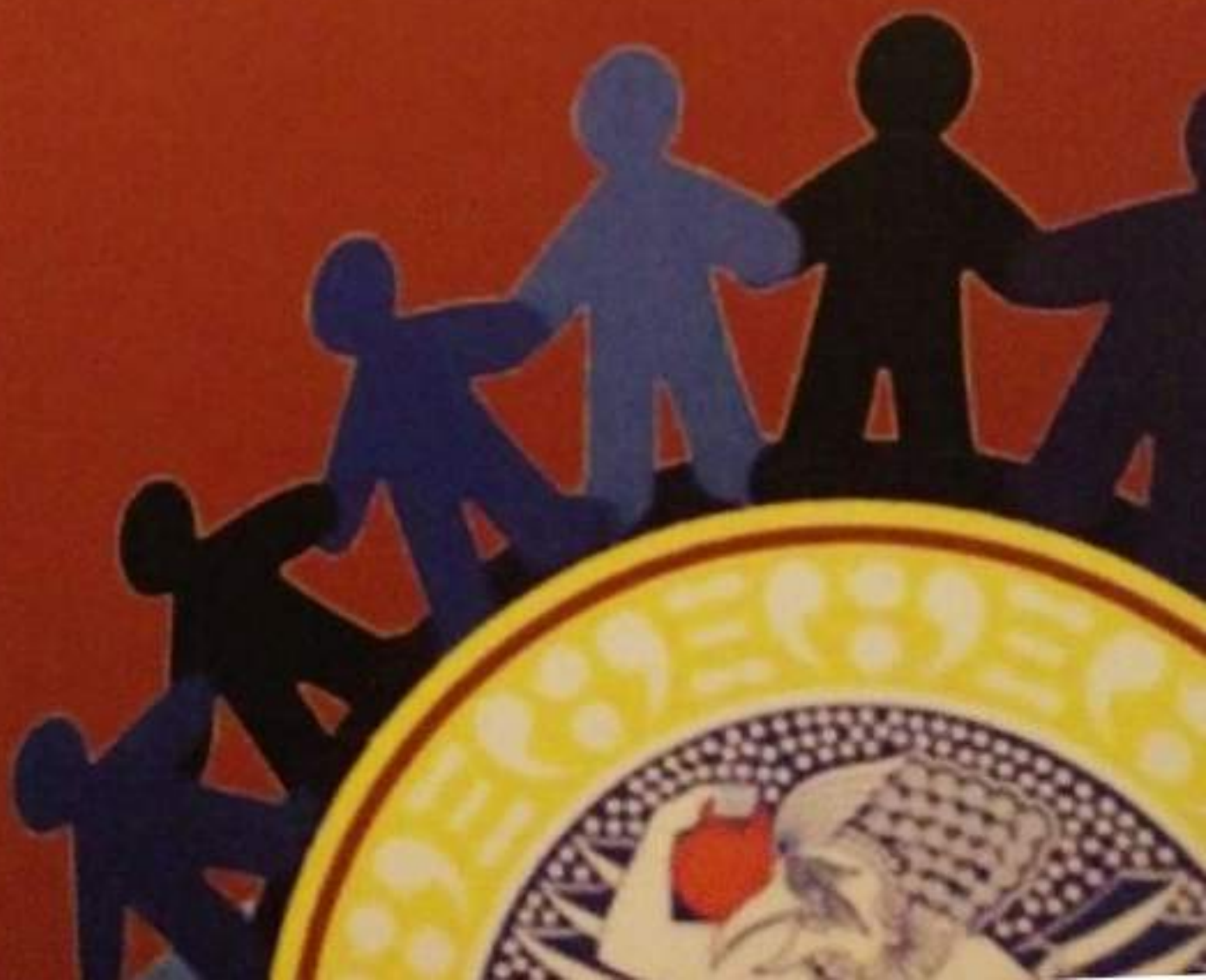
JSMiD

Joint Scientific Meeting in Dentistry



*“Gaining Optimum Oral Health Through
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Fabrication of Nano Reinforced Hydroxyapatite-Zirconia used as Filler in Dental Cement Resin

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Hydroxyapatite (HAp) already well known and has been widely used in the field of medical and dental, such as in bone cement, implant, and alveolar ridge augmentation. HAp [$\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$] as a bioceramic consisting of calcium phosphate has biocompatible properties to the human body. The aim of this study is to investigate the basic properties of nano reinforced hydroxyapatite-zirconia (HAp-Zr) used as a filler in dental cement resin. The composite HAp-Zr powder was synthesized by coprecipitation method at pH 9,5 and sintered at 900°C . XRD results revealed that the main phase developed were hydroxyapatite and zirconia. SEM morphology of the interface showed no gap between cement and tooth structure. We concluded that the HAp-Zr filler was increased the mismatch degree and mechanical interlocking between dental cement and tooth structure.

Keywords: Hydroxyapatite, zirconia, dental cement, interface