THE EFFECTS CAUSED BY THE ADDITION OF PALADIUM NANOPARTICLES TO Sn-Ag ALLOY FOR DENTAL USE

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It has been found that adding refined material in the mechanical properties of alloys that have no reinforcing. Thus the effect of adding palladium nanoparticles in Sn-Ag alloy was evaluated. The manipulation of these atomic arrangements in nanometer state leads to the possibility of designing new materials with properties required for certain technological applications [1]. One possibility is the application of these materials in nanocrystalline alloys for dental use and another applications.

The effects caused by the addition of palladium nanoparticles, will be evaluated using the response surface methodology (MSR). The tests which the samples to be evaluated shall be submitted are: hardness (Vickers), grain size and microstructure. Through the Vickers hardness test, a hardness of palladium nanoparticles without material with a value of 100 was obtained HVN. While having NPs present a hardness of 400 HVN already considered Type IV extra hard alloy according to the classification of dental alloys However the Ag-Sn alloy is only used for teaching in dental laboratories as it does not meet the appropriate mechanical properties for use [2]

The objective of this research is to reinforce the mechanical properties of the materials mentioned above by the addition of nanomaterials and will be suitable for use in dentistry.

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References:


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