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Comparative Evaluation of Thione and Phosphate Monomers on Bonding Gold Alloy and Ti-6Al-7Nb Alloy with Tri-*n*-butylborane initiated Resin

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Abstract:
This study aimed to evaluate the bonding behaviors of a gold alloy and a titanium-aluminum-niobium (Ti-6Al-7Nb) alloy after priming with three metal conditioners. Cast alloy disks were ground and divided into the following four conditions: (1) unprimed control *versus* priming with (2) Alloy Primer, (3) Estenia Opaque Primer, or (4) V-Primer. The disks were bonded with tri-*n*-butylborane (TBB) initiated methacrylic resin, and shear bond strengths were determined both before and after 20,000 times of thermocycling. Alloy Primer and V-Primer—which contained a vinyl-thione monomer—were effective for bonding the Au-Pt-Pd alloy. As for the hydrophobic phosphate monomer contained in Alloy Primer and Estenia Opaque Primer, it was effective for bonding the Ti-6Al-7Nb alloy. Further, when specimens were primed with Alloy Primer that contained both functional monomers, bond

strength to Ti-6Al-7Nb alloy was greater than that to Au-Pt-Pd alloy.

Key words:
Phosphate, Thione, Ti-6Al-7Nb alloy

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