

Technical Bulletin

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THE CLADDING AND JOINING OF CERAMICS TO METALS BY ELECTROFORMING

The most common way of joining ceramics to metals is by brazing, with the ceramic being pre-metalized in some cases to allow wetting of the braze onto the ceramic.

Electroforming a metalized ceramic to a metal offers an alternative that can be employed when the ceramic physically cannot be brazed or will not withstand the brazing operations or high temperatures. INTA Technologies Corporation has successfully produced vacuum tight joints using this method. A case in point is the joining of an optical window to a metal flange and the formation of a high dielectric constant wave guide by electroplating 0.060” thick copper onto a thirty (30) inch long by 1.25” by 1.00” rectangular metalized TiO₂ slab window.

Other applications might include the selective copper cladding of electronic components and packages followed by a gold top layer.

In summary, a variety of metals have been electroformed onto both conductors and insulators for the medical and microwave industries. For more information on joining by electroforming and electroplating applications contact Blake Kneedler with INTA Technologies at (408) 748-9955 ext. 113.