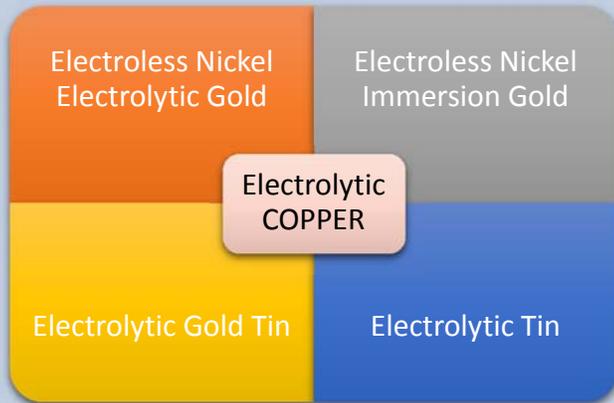


SPECIALTY PLATING

Remtec's state-of-the-art plating lines with contemporary process control apparatus and on-site analytic laboratory ensures quality and provides customers with fast turnaround, wide variety of finishes and cost savings alternative to expensive deposition processes.

Remtec Inc. manufacturing technologies are based on a combination of thick film, thin film or direct bond copper metallization and electrolytic or electroless plating. Therefore, in addition to a line of products based on the above techniques Remtec also offers specialty plating service. In general, our plating capabilities include electrolytic copper, tin, gold-tin alloy, nickel and gold plating as well as electroless nickel, and immersion gold plating.

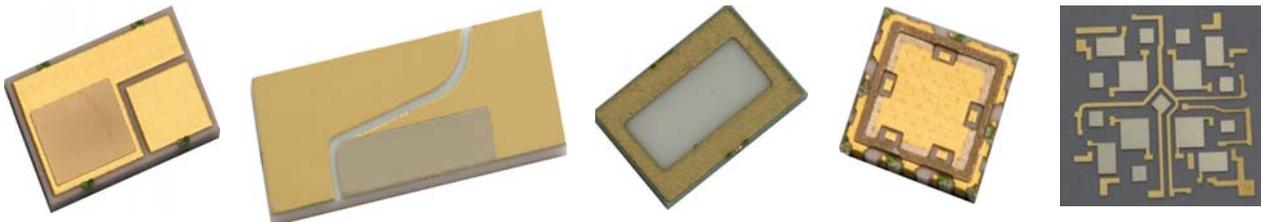


Depending on type of plating and specific application plating can be applied onto ceramic metallized with either thick film or thin film or co-fired ceramics or direct bond copper. In addition, it can be applied onto glass, quartz, organic boards, semiconductor wafers, metals and metal alloys.

Remtec's x-ray fluorescence system is used to verify the thickness and composition of plated deposits in a broad range with great accuracy. An on-site analytic laboratory ensures tight plating control and allows the finite adjustments that assure process uniformity for all plating operations.

Gold Tin Plating

On a high end, the Gold Tin plating capability offers customers a cost saving alternative to expensive thin film deposition in the same time maintaining high performance and tight thickness and composition control. On the other side of products spectrum, it replaces manual handling and tack welding individual solder preforms. Gold tin can be selectively plated on BeO and AlN laser diode submounts. LED submounts, photo diode submounts, ceramic circuits, packages, ceramic and Kovar lids and semiconductor wafers



AuSn Plating Parameters for Submounts

<i>Parameter *Thickness</i>	<i>Range</i>
<10 μm	$\pm 1 \mu\text{m}$
>10 μm	$\pm 1.5 \mu\text{m}$
Composition	77 \pm 3.5 (wt% Au)
Melting Point (for near eutectic composition)	280-290 $^{\circ}$ C
Composition Capability	65-100 (%wt Au) With ± 3.5 (wt% Au) tolerance

Length, in (panel size)	Width, in (panel size)	AuSn deposition: Thickness Variation Range
2-3	<0.3	1.5:1
2-2.5	0.5-0.75	1.5:1
2.5-3.0	1-2.5	1.5:1
3	3	2:1

Plating on LTCC

Another special plating offering is Ni-Au plating on LTCC substrates. The NiAu plating capability offers customers a cost saving alternative to use of expensive multilayer gold conductor replacing them with silver multilayers saving time and maintaining excellent solderability and wire bondability of top surface metallization. Process ensures superior adhesion, initial and after thermal cycling and aging as well as long pot life.

The sales and applications engineering team at Remtec is staffed to provide a diverse customer base with rapid response, short lead time and problem solving support. Remtec, a RoHS compliant, ISO 9001:2008 certified and ITAR compliant company, supplies multilayer substrates in low, medium and high volumes for military, avionics, space and industrial applications.



**CERAMIC PACKAGING SOLUTIONS
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