

Direct soldering by means of an active metal interlayer

Title	Direct soldering by means of an active metal interlayer
Basic technology outline	<p>Direct soldering by common solder and active metal interlayer</p> <p>A direct soldering process utilizing a combination of conventional solder and interlayer of active metal (Ti, Mg, Zr, Hf, Cr, La, Y, Ce, Pr)</p> <p>Allows direct soldering of non-metallic materials without their prior plating and without the use of active solders</p>
Technology deployment	<p>Soldering of metallic materials with non-metallic</p> <p>Usable in the fields of vacuum technology and other laboratory techniques, electrical engineering, research and development.</p> <p>Allows direct soldering of metallic materials with non-metallic or difficult to solder materials</p> <p>Designed for ultrasonic or vacuum soldering</p> <p>Suitable for the manufacture of products based on metals, technical ceramics, glass and other nonmetallic materials</p>
Advantages over currently used solutions	<p>Usable for all application temperatures</p> <p>Allows use of common solders (Sn, Sn+Ag, others) with non-metallic soldering</p> <p>Suitable for all application temperatures and large amount of materials - by the combination of solder and active metal used</p> <p>does not require special processing of soldered materials</p>

Current status of technology	Patented and tested technology (Slovak) patent pending No. 50086-2016 Successfully tested under relevant conditions Realized and analyzed were solder joints formed between the materials: Cu a Si, SiC, Al ₂ O ₃ , SiO ₂ , C (graphite) and others
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