Direct soldering by means of an active metal interlayer

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

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_2O_3, SiO_2, C (graphite) and others
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