

## DRDO's patent technology now with Pune start-up firm

CuTi technology is patent protected by DRDO and the Pune-based start-up has been granted an exclusive license to manufacture. In the first ever initiative of its kind, Defence Research and Development Organisation (DRDO) has provided its patented Copper-Titanium (CuTi) alloy technology for commercial exploitation to a start-up company. The agreement between DRDO and Pahwa Metal Tech Pvt Ltd was signed on the sidelines of the Start Up India event at Delhi last week. CuTi technology is patent protected by DRDO and the Pune-based start-up has been granted an exclusive license to manufacture these products in India and sell them globally. DRDO will charge an upfront Transfer of Technology fee and a royalty that will be paid over 10 years. CuTi alloy was developed by DRDO's Defence Material Research Laboratory (DMRL) at Pune, which was granted its patent in 2004. It was lying hidden in the lab till DRDO and FICCI conceived the ATAC (Accelerated Technologies Assessment and Commercialisation) programme in July 2008, and DRDO asked its various labs to identify their patents which have commercial potential. Nearly 300 technologies underwent technical assessment by DRDO, of which 40 were offered to private developers in 2009. "The ATAC programme has been conceived to identify 'hidden treasures' in various DRDO labs and bring them to the market. Most of these products and technologies were closed activities for us but they have now been brought back to life under 'Make in India'. That we have been able to do it with a start-up is a bigger bonus," S Radhakrishnan, director, Directorate of Industry Interface & Technology Management in DRDO told The Indian Express. CuTi was developed by DRDO to make hand tools which are heat and spark free. DRDO works on products containing explosives and other inflammable material which cannot be worked upon with conventional tools. "The heat produced by the last torque of the conventional spanner, and the slip of the tool creates an arc which renders these tools unsafe for us. We were importing tools made of Copper-Beryllium (CuBe) alloy from abroad which needed to be replaced by us. But Beryllium is highly toxic and it is also not available in India. This led to development of CuTi alloy by DMRL which filed for a patent in 1999," a DRDO scientist explained. CuBe is strongest known alloy of Copper and finds uses in many applications across industry sectors. Beryllium is a rare-earth material, hazardous to produce and causes fatal human disease called Chronic Beryllium Disease, when the exposure exceeds a certain limit. Many countries are restricting or banning use of alloys containing beryllium. Because of its rare earth nature and strategic use in high-end defence products, Beryllium is also prohibitively expensive. Of the many alternatives developed globally, DRDO's CuTi comes closest to CuBe, in which Copper provides malleability and Titanium provides strength. The resulting alloy has high conductivity and thus produces no spark. Besides non-sparking hand tools, the start-up also intends to use the alloy for resistance welding products, MIG welding, electrical contacts, plunger tips, dies and moulds products, engine valve seats and for other special applications. "DRDO developed this material for non-sparking tools, which is one of the several applications of this material. We will develop this technology further and make its use suitable for several applications and thus increase the basket of offerings. We are setting up a R&D facility along with our project," Lalit K Pahwa, managing director and founder of Pahwa Metal Tech Pvt Ltd explained. DRDO says that it is not looking to profit commercially from the venture. It is only reimbursing the costs incurred for technical support provided to the start-up, and not recovering its development costs.





























































