



Thermal Spray Technology in remanufacturing engineering

Remanufacturing need specific key technologies as support. Advanced surface engineering and nano surface engineering technology are part of key technologies. Thermal spraying techniques are coating processes in which melted (or heated) materials are sprayed onto a surface. The "feedstock" (coating precursor) is heated by electrical (plasma or arc) or chemical means (combustion flame).

Thermal spraying can provide thick coatings (approx. thickness range is 20 micrometers to several mm, depending on the process and feedstock), over a large area at high deposition rate as compared to other coating processes such as electroplating, physical and chemical vapor deposition. Coating materials available for thermal spraying include metals, alloys, ceramics, plastics and composites. They are fed in powder or wire form, heated to a molten or semimolten state and accelerated towards substrates in the form of micrometer-size particles. There are a variety of thermal spraying methods, including high-speed arc spraying and supersonic plasma spraying with wider application. Supersonic plasma spraying method can be prepared nanostructured coatings.