



PRODUCING THE MOST SPHERICAL, PURE TITANIUM POWDERS

Project Name	Plasma Atomization Reactor for Producing Titanium and Titanium alloy spherical powders
Customer	Internal Project, Sold to AP&C in 2006
Location	Montreal, QC (now Boisbriand QC)
Delivery	Operated from 1998-2004 by PyroGenesis Operated by AP&C from 2005-2006, Sold to AP&C in 2006
Products/Services	Development Services, Reactors, RPT Plasma Torch
Capacity	3 x 30 kW Torches (argon gas); up to 2 kg/h (scalable to 5 kg/h)
Feed	3.2 mm Titanium Wire
Energy	n/a
PyroGenesis Role	Design, fabricated, assembled and operated complete Plasma Atomization unit, with torches, bubble-jacketed water-cooled chamber, vacuum pumps, wire feeder, etc.
Other stakeholders	Stryker (client for titanium powder)

Our team of engineers, scientists and technicians have developed this patented technology for producing a highly pure spherical metallic powder for a multitude of application in the biomedical and additive manufacturing fields. A small wire is fed to the chamber, where three RPT plasma torches impinge on the surface of the wire at 3-4 times the speed of sound to both melting the wire and to finely atomize the metal, forming small droplets, which solidifying as the powders fall down the tall chamber filled with argon.



This system was operated by PyroGenesis for many years before the company entered into a joint venture which ultimately led to the sale of the system to AP&C in 2006. The Plasma Atomization technology

platform is now the industry standard for producing spherical metal powders for additive manufacturing techniques like 3D Printing. AP&C sold their powder business to ARCAM, a supplier of 3D Printing units in 2013.