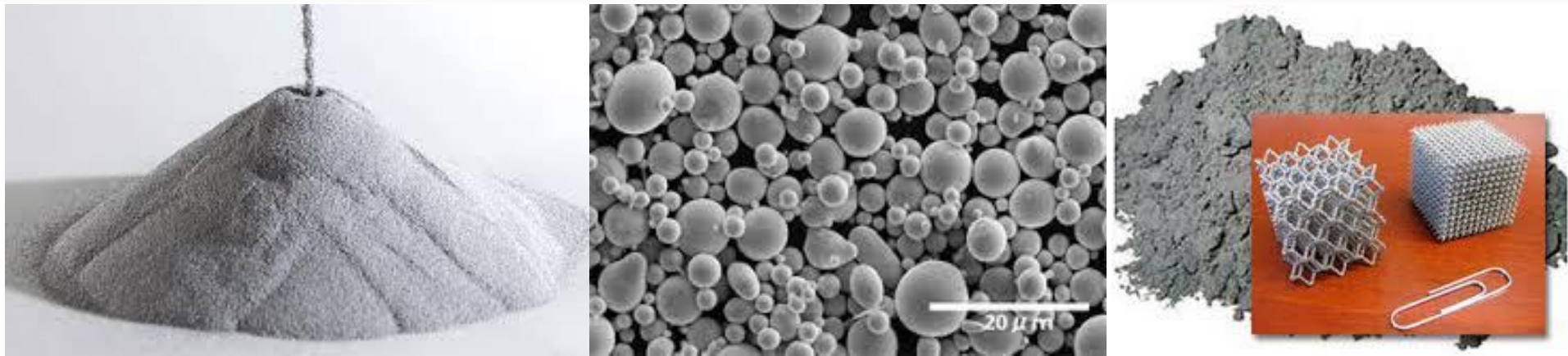


# NUMANOVA SRL

## **Powder Metallurgy and metal powders for advanced and special applications**



# Premises



Powder Metallurgy (**PM**) is a term covering a wide range of ways in which materials or components are made from metal powders. PM processes can avoid, or greatly reduce, the need to use metal removal processes, thereby drastically reducing yield losses in manufacture and often resulting in lower costs and production processes optimization.

Powder Metallurgy is also used to make unique materials impossible to melt or form in other ways (as in case of intermetallics, ceramics and refractory materials).

# Present domestic and international competition

## ITALY

Few relevant producers, many distributors of international producers (from USA , mainly)

Domestic PM production is concurring world yearly production for about 4% (>20.000 ton per year)

Domestic PM consumption is concurring world yearly consumption for about 7% (>40.000 ton per year). This makes Italy a net importer of PM.

## USA and ASIA

USA, China, Japan, South Korea and India are globally representing more than 70% of world PM market. USA and SK are net exporters of PM; China, Japan and India net importers.

# PM production processes

## PM production through Gas Atomization



# Project proposal

To create in Italy a *newco* for PM production, equipped with *best available technologies* (BAT) for mother alloys and PM (and ceramic powders) production, based on main industrial processes, as:

- Atomization (gas, water, centrifugal)
- Mechanical comminution
- Chemical (e.g. oxide reduction, precipitation)
- Electrolysis

Initial site production capacity will be of about 500 ton of finished PM per year, for application in advanced manufacturing technologies (e.g. Additive Manufacturing, MIM, HIP) and application fields (e.g. aerospace, energy, mechanics, biomedical).

**Foreseen investments:** 12 ML Euros.

# Project proposal (2)

**First step** = production assets acquisition / take-over.

**Second step** = plants expansion, certification and qualification, staff members (e.g. quality inspection, logistics, warehouse).

**Third step** = two-year investment plan (tuned based on market trend and performances)

Estimated **operative personnel**\* in full-load condition (three shifts per day): 50 persons.

\* = includes Staff, Purchase, Sales, Marketing, Quality (and Inspection), Logistics, Admin, HR, HSE

# Cooperations and interactions

**Numanova** and **Seamthesis** signed framework agreements for commercial and technical cooperation with leading companies acting in the Additive Manufacturing and advanced metallurgy (and related production technologies) as well as memorandum of understanding (MoU) with national and international Universities and R&D centers operating in the same fields.

## Seamthesis

Innovative start-up founded in 2013 with operation units in North Italy and Nera/Montoro (TR) for R&D activities in product and process metallurgy, process and material modeling, development and fine tuning of advanced technologies for PM production and their application in non conventional manufacturing techniques (e.g. Additive Manufacturing, laser cladding, MIM, HIP, PTA).