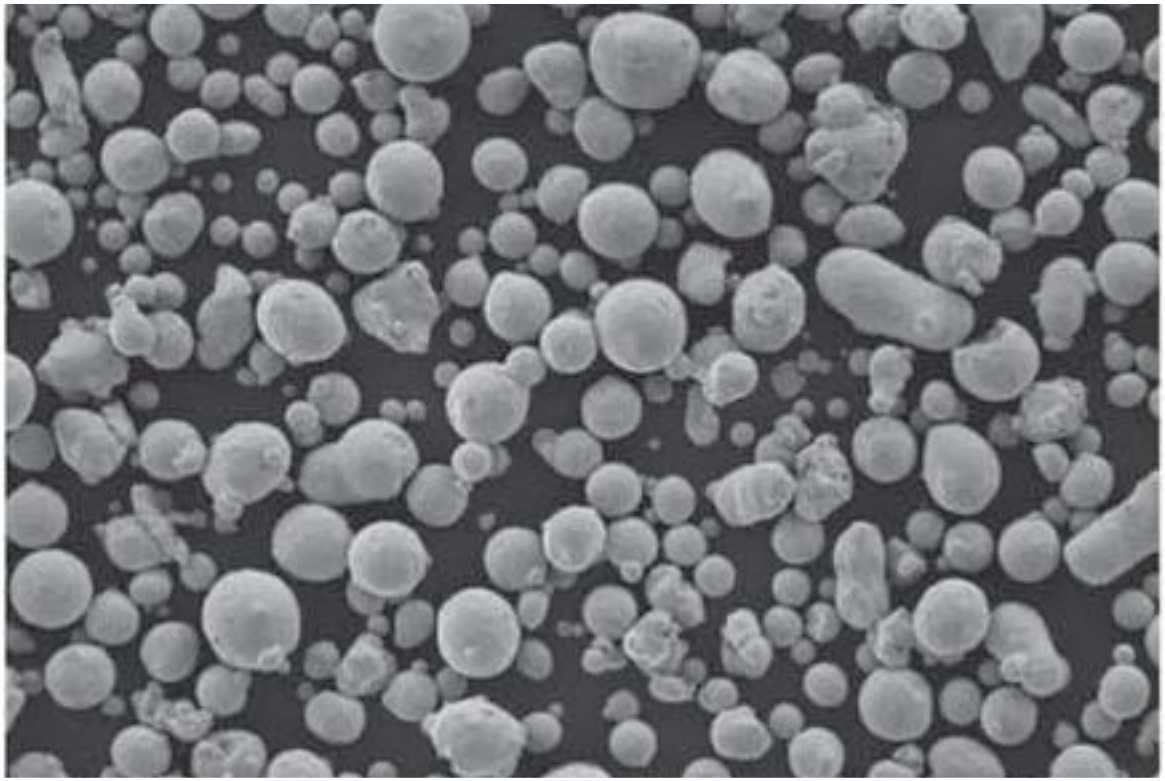
METHOD FOR MECHANICAL PROCESSING OF POWDERS



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KEYWORDS:

Powder production
Spheres
Resonance

Ball milling, although effective, allows the production of only small amounts of powders useful on a laboratory scale. To overcome this problem, an innovative and easily scalable method has been developed for the processing and/or mechanical activation of powders (metallic or non-metallic) by means of spheres bringing the jar-powder-spheres system to the resonance frequency.

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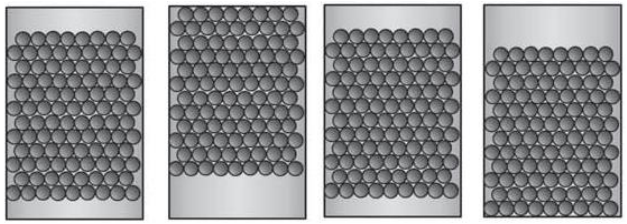
DESCRIPTION:

The method involves the use of an acoustic resonant mixer with vertical, horizontal or combined action able to reach high accelerations ensuring an efficient energy transfer between spheres and powder. Its versatility makes it possible to obtain an effective regulation of the operating parameters, some of which can not be modified using standard methods. The method, already successfully tested on a long series of ingredients (Mg, Al, Steel, Graphite, Silicon, Metal Oxides, etc.), allows to produce potentially any type of powder with desired characteristics (structure, composition, incorporation or coating with other materials, particle shape, specific surface, level of impurity, metallic content, crystallite size, etc.).



ADVANTAGES:

- Lower time and production costs;
- More efficient process and activation;
- Innovative materials production;
- Process flexibility and adaptability;
- Scalability

APPLICATIONS:

- Additive manufactoring powders;
- Production of controlled reactivity materials (explosive powders);
- Multicomponent particles;
- Optimized ingredients for powder dispersive mix (cosmetics, pharmaceutics, tecnical pastes).