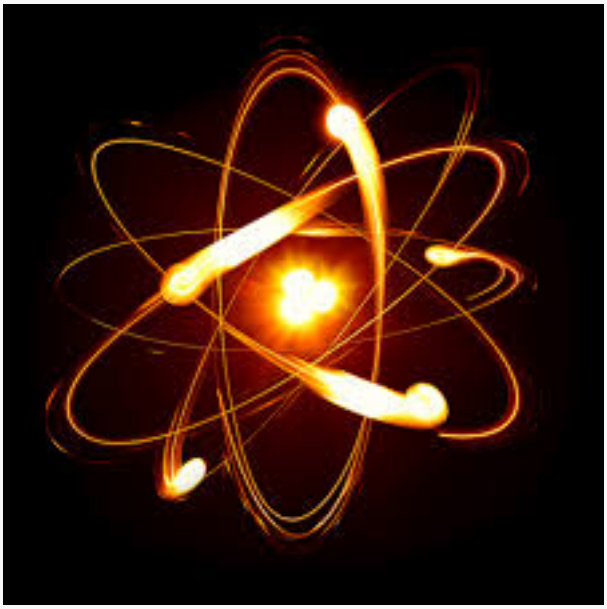
PyroGenesis Announces the Development of New Plasma-Based Process to Produce Metal Powders

PyroGenesis Additive Announces the Development of New Plasma-Based Process to Produce Metal Powders; Production of MIM Cut in Quantity; Ramp-Up Update



MONTREAL, QUEBEC, CANADA, August 14, 2017 /EINPresswire.com/ -- PyroGenesis Additive, a division of PyroGenesis Canada Inc. (TSX VENTURE:PYR) (OTCQB:PYRNF), a high-tech company (the "Company" or "PyroGenesis") that designs, develops, manufactures and commercializes plasma waste-to-energy systems and plasma torch products, is pleased to announce today that it has developed a new plasma-based process to produce metal powders which, not only enables MIM cut powder production at higher volumes, but may have a greater impact on the market than the Company's original Plasma Atomization technology. Furthermore, the Company announces that the previously announced ramp-up phase for its first powder production system remains on schedule.

The Company provides the following highlights and developments to date:

On October 26, 2015, PyroGenesis announced that it was re-entering the market to produce metal powders, specifically for Additive Manufacturing (3D printing);
On April 7, 2016, PyroGenesis announced its intention to spin-off its Additive Manufacturing capabilities into an independent public entity;
On April 27, 2016, PyroGenesis announced that its 3D Printing particle size distribution greatly

exceeded expectations;
On October 25, 2016, PyroGenesis announced that it had filed a patent for an improved metal powder production process and that the Company was on schedule for a 2017-Q1 powder production system assembly and first production run;
On January 23, 2017 and March 14, 2017, PyroGenesis provided updates on 3D Printing and reaffirms that it is on schedule for 2017-Q1 assembly and first production run despite delays with suppliers;
On March 30, 2017, PyroGenesis announced that it had completed the assembly of its first powder production system, with its first powder run exceeding expectations, and that the ramp-up, which was already underway, was expected to take place linearly over approximately four (4) months;
On April 25, 2017, PyroGenesis announced receipt of its first powder order from a multinational conglomerate, with the down payment already received, and market interest exceeding expectations;
On June 7, 2017, PyroGenesis announced receipt of its second powder order;
On June 14, 2017, PyroGenesis announced creation of PyroGenesis Additive; and
On June 19, 2017, PyroGenesis announced receipt of its third powder order and successful delivery of its first order which included both Titanium and Inconel powders;
Mr. P. Peter Pascali, President and CEO of PyroGenesis, provides an overview of today's announcement in the following Q&A format:

Q. What exactly is a "MIM cut"?

A. MIM technically is short for "Metal Injection Molding". The MIM cut refers to a particularly small metal powder size typically used in metal injection molding, and is now becoming of interest to certain 3D metal printer manufacturers. The metal powder sizes we deal with are measured in microns, with the MIM cut typically being between 5-20 microns, and sometimes as high as 25 microns.

Q. Is PyroGenesis not the inventor of the Plasma Atomization technology? A technology that makes small, metal powders for 3D metal printers, and which in fact, has become the gold standard for the production of titanium powders for the industry?

A. Yes, that is correct. We are the inventors of the Plasma Atomization technology. A technology we use to produce very small, uniform, fully dense and spherical metal powders that flow like water, and which are highly sought after in the additive manufacturing ("AM") Industry. We first began producing powders using our Plasma Atomization technology for the biomedical industry between 2001-2004. In 2015, PyroGenesis invested approximately $2MM in improving both the production rate and particle size distribution, which led not only to a patent pending, but also to PyroGenesis' decision to re-enter the market and produce powders for the AM Industry.

Q. Could you describe the MIM cut in relation to 3D printers and the Plasma Atomization technology's capabilities?

A. This is a very broad subject but I will try to give a brief overview recognizing the limitations of this forum.

Basically, there are now three (3) broad types of 3D printers using metal powders.

The first (1st) type is electron bean melting (EBM), used, for example, by Arcam printers, now part of GE Additive. EBM manufactures parts by melting metal powder layer by layer with an electron beam in a high vacuum. EBM technology uses the larger/coarsest fraction produced by our Plasma Atomization technology; typically, in the 45-106-micron range.

The second (2nd) type is Laser sintering, used, for example, in EOS, SLM, and Concept Laser

printers. These printers use the small to middle fraction produced by our Plasma Atomization technology; typically, in the 15-45-micron range. Most metal printers use this small/middle fraction.

The third (3rd) type is an inkjet type technology, used, for example, by Desktop Metals, and whereby the powders are coated with a binder to "glue" the powders together. These printers require ultra-fine powder, smaller than the powder required for Laser sintering machines, and a size cut that, until recently, PyroGenesis was not focusing on. There are some printers that use inkjet type technology but only need coarser powders, but we are not reviewing these printers here.

Q. Ok, so PyroGenesis' Plasma Atomization technology is good at addressing the powder needs of the first two (2) types of metal printers, i.e. EBM and Laser sintering, which combined use a powder size of between 15-106 microns; however, what about the third (3rd) type, the inkjet type technology, that uses the ultra fine, or MIM cut requiring a powder size of between 5-25 microns? What is PyroGenesis doing to address this new market?

A. That is a very good question and one that investors have been asking us as of late, and is, in fact, the essence of our announcement today.

PyroGenesis' Plasma Atomization technology already produces powders for EBM and Laser Sintering in optimal quality and quantities. To the best of our knowledge, only plasma technology can produce the high-quality powders required for these printers.

For the complete news release visit:

https://web.tmxmoney.com/article.php?newsid=7951249275881825&qm_symbol=PYR

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