ATMOSPHERIC PLASMA SUPPORTING INDUSTRY 4.0

May 2023

CREATING ADVANCED MATERIALS FOR ADDITIVE MANUFACTURING TO SUPPORT THE 4.0 INDUSTRY AND DECREASE ITS CARBON FOOTPRINT

Referring to the fourth industrial revolution, the term Industry 4.0 encompasses the advances made during the 21st century in automation, connectivity, advanced material manufacture, analytics and processes as well as advanced manufacturing technology. These new technologies have transformed business practices, the full potential of which is still being discovered.

However, businesses of all industrial sectors are keen to profit from these advances finding that their integration into existing manufacturing sites and processes holds great potential for both their operations and future production.

Creating advanced and high-performance materials for Additive Manufacturing to support industry 4.0 expansion and decrease its carbon footprint, Luxembourg based **AM 4 AM have patented a cold plasma process using AcXys Technologies TKS** equipment, that provides extra properties to conventional materials thereby extending the range of AM (Additive Manufacturing) materials used mainly in the 3D printing sector.

Aluminium powder processing

ATMOSPHERIC PLASMA SUPPORTING INDUSTRY 4.0

AcXys Technologies
info@acxys.com
www.acxys.com

AM4AM
info@am-4-am.com
www.am-4-am.com

Maxime Delmée CEO & Andy Dewez COO, AM 4 AM

This product called "HiperAl" is processed by additive manufacturing and generates crack-free parts with best-in-class mechanical properties and has been designed at first for space, aeronautic and automotive lightweight applications.

Monsieur Maxime Delmée CEO and Founder of AM 4 AM commented : "*We are really pleased to announce that our first production unit is operational in Luxembourg since few weeks. We are fully ready to answer customer demands and provide HiperAl to the Additive Manufacturing market. First batches of powder are already in production!* ***Thanks a lot to our trusted partner*** **AcXys Technologies** ***for the development and conception of this first production equipment".***

Ecological responsibility should also be counted as one of the advances covered by the term Industry 4.0. In fact, this is often the first concern considered when introducing new processes and materials.
Only requiring electricity and compressed air ULS technology answers these ecological concerns.

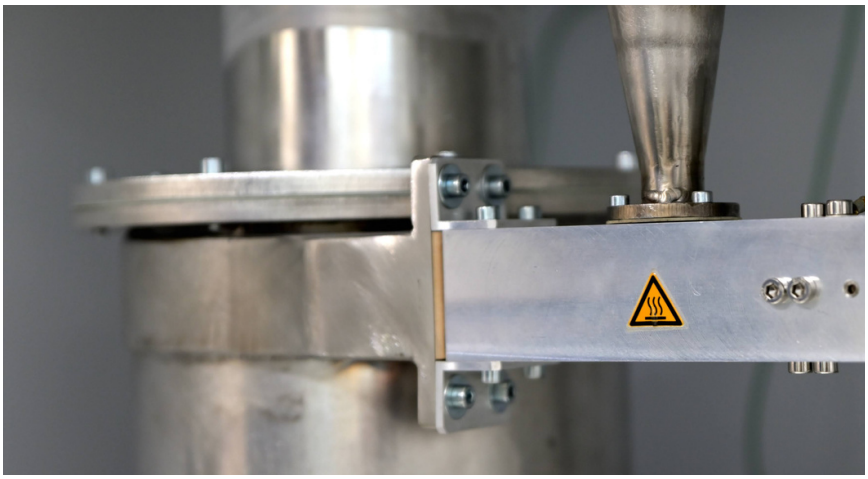
ATMOSPHERIC PLASMA SUPPORTING INDUSTRY 4.0

AcXys Technologies
info@acxys.com
www.acxys.com

AM4AM
info@am-4-am.com
www.am-4-am.com

The Atmospheric Plasma Solution

The principle of plasma technology is to pass a gas, such as compressed air across an electric arc. The gas then becomes a plasma which is blown directly onto the material to be treated.
The energy contained in the plasma causes a chemical reaction which, firstly, eradicates any surface organic residues then, at a molecular level, grafts new properties into it or even removes material, depending on the application or process. These new grafted properties are mostly polarised, inducing an increase in surface energy and therefore adhesion. This technology can be integrated with many, different add-on tools to form the TKS range. With their easy automation features, atmospheric pressure plasma technologies enable a cost effective, quick and environmentally friendly implementation of manufacturing processes to better address the ever-increasing requirements of industry.



Powder Separator

AcXys Technologies TKS equipment

AcXys Technologies has developed a full range of equipment to address all surface treatment needs. By integrating atmospheric plasma ULS technology with add-on tools such as an adaptor for powder activation, powered syringes for precise thin layer deposition or co/robots for precise parameter control, AcXys Technologies' TKS atmospheric plasma equipment provides solutions to many of the challenges faced by manufacturers in their search for Industry 4.0 compatibility.
All of the TKS equipment is manufactured to the customer's specific requirements. Suitable for stand - alone use and partial or even complete production in-line integration, this service offers the customer freedom to re-think how their processes and facilities operate and the opportunity to add additional functions and features to existing products.