PLIANT: Process Line Implementation for Applied Surface Nanotechnologies

James Thomson[1], Paul Coffey[1], Philip Martin[1], Holger Althues[2]

[1]School of Chemical Engineering and Analytical Science, University of Manchester, UK

[2]Fraunhofer-Institut für Werkstoff- und Strahltechnik (IWS), Dresden, Germany

e-mail: Philip.martin@manchester.ac.uk

PLIANT (Process Line Implementation for Applied Surface Nanotechnologies) is an EC-funded FP7 large-scale integrating collaborative project involving 25 partners that focuses on the fabrication of nanostructured surfaces through atmospheric pressure processes. [1].Within the nano-materials area, three strategic categories have been selected: nano-tubes, nanostructured films, and nano-engineered surfaces. Pilot lines are being established to target substantial potential applications in three strategically significant industrial areas:

- energy storage by high capacity batteries and hybrid capacitors with enhanced energy density,
- solar power generation and
- energy efficient (lightweight) airplanes.

A further aim is to develop process control concepts based on in-situ monitoring methods allowing direct correlation of synthesis parameters with nanomaterial structure and composition. Demonstration of the developed online monitoring tools in pilot lines is targeted.

Results will be presented of recent progress on the project with specific reference to monitoring techniques for nano-engineered surfaces in the aerospace industry.

References

1. http://www.pliant.eu/