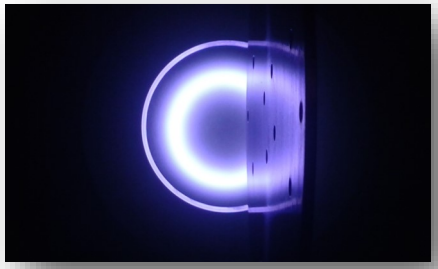
Innovation in surface technology

Nano4Energy is an advanced technology R&D company in the area of **thin film surface engineering**.



We offer partnership in the whole **R&D** process for development of new technology for your specific needs in order to maximise the always so important **quality** and value for money.

Specialty Coatings

High performing DLC	All-in-vacuum deposited ultra barriers for OLED
Nanostructured antibacterial coatings for implants	All-in-vacuum CIGS deposition
Reactive HIPIMS deposition of TiN	Molybdenum disulfide as solid lubricant in space
Anatase TiO_2 for antibacterial surfaces	Nanostructured Tungsten for Nuclear fusion reactors

*We want our customers to share our **excitement** of improving the **performance** and quality of their processes and products by developing advanced deposition techniques beyond the current **state of the art**.*

www.nano4ENERGY.eu

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nano4ENERGY

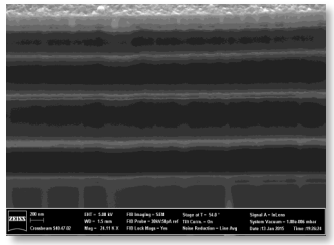
Nanotechnology for the industry

—

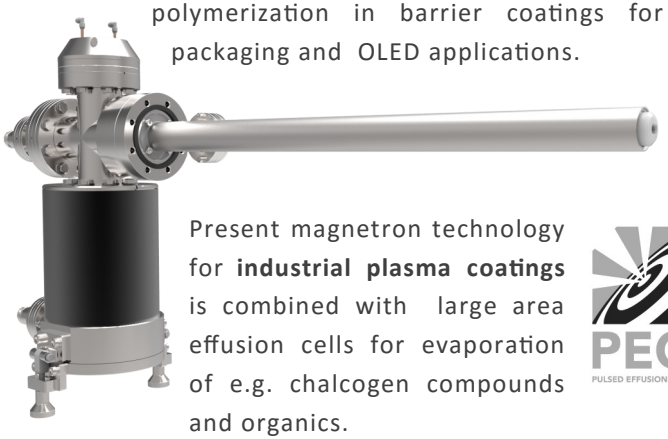
from idea to product

Advanced Evaporation sources with reactive process control

Nano4Energy has developed a new generation of Pulesed valve Effusion Cells **PEC** enabling to inject evaporated species with a completely new level of control in the process for large area deposition.



Together with Gencoa Ltd a **reactive process control** system has been developed. The system has been proven successful for both CIGS/CZTS absorbers using hybrid sputtering, and for plasma polymerization in barrier coatings for packaging and OLED applications.



Present magnetron technology for **industrial plasma coatings** is combined with large area effusion cells for evaporation of e.g. chalcogen compounds and organics.

PEC
PULSED EFFUSION CELL

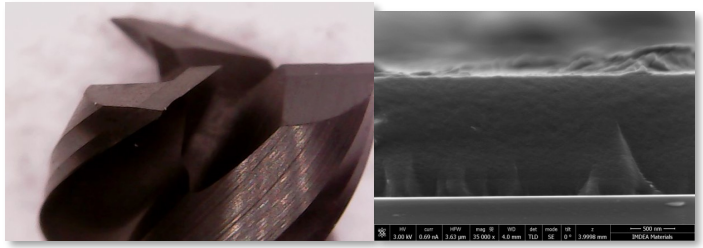
Diamond Like Carbon

Diamond-like carbon (DLC) coatings have been recognized as one of the most valuable engineering materials for tribological applications.

Nano4Energy has developed a novel process for deposition of a wide range of highly adherent DLC by sputtering with hardness up to 35GPa in both metallic and insulating substrates.

The process involves ion-implantation by HiPIMS, adhesion layer of WC and finally a customized DLC layer, all in one process.

The process offers very high quality DLC in combination with high throughput



hiPV

HIPIMS your system

The new industrial HiPIMS PS technology!

- FLEXIBLE
- RELIABLE
- MODULAR
- MULTI-FUNCTIONAL

- **HiPIMS-PS** **Uni-Polar / Bi-Polar**
  (with Superimposed / Sequential HiPIMS capability)
- **DC-PS** (for magnetron sputtering, PECVD, Etch...)
- **DC-Pulsed-PS** **Uni-Polar / Bi-Polar**
  (for magnetron sputtering, PECVD, Etch...)
- **HiPIMS-Bias / DC-Bias / DC - Pulsed- Bias**
  (synchronization possible)
- **Single & Dual magnetron capability**

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