

Highly optically transparent and electrically conductive metal oxalates microstructures

ITO (indium tin oxide) coatings are among the most widely and transparent conductive coatings. ITO deposition process requires expensive equipments and it turns out to be difficult to form ITO complex patterns on substrate. By way of consequence, the use of metal oxalate has emerged as a leading alternative to the incumbent technical solutions.

COMPETITIVE ADVANTAGES

- Metal/oxide mesh
- Micrometric thin layers
- Cost saving
- Several substrates: rigid and flexible substrates, optically transparent

DESCRIPTION*

- Laser exposure (SLS/ SLM):
 - Metal oxalates selective decomposition process under laser exposure
 - Work out results: 2D or 3D, micro or macroscopic structures
- 2D structure manufacturing process: the oxalate deposition by laser exposure and removal of residue by washing or dissolution
- 3D structure manufacturing process: SLS/SLM process using low power laser. Nanoparticles are generated during the mixed oxalates selective decomposition process

APPLICATIONS

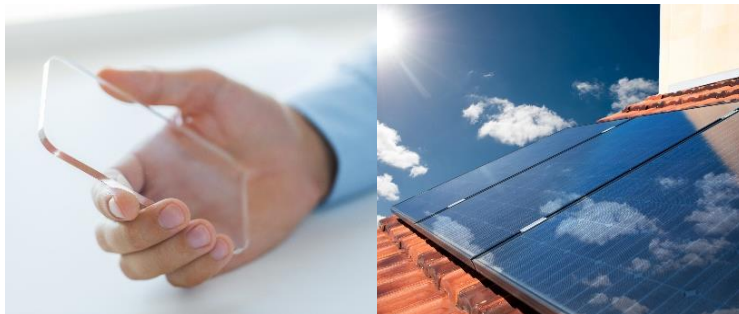
- Photovoltaic
- Power connectors
- Sensor systems
- Smart window
- Optics

INTELLECTUAL PROPERTY

- Patent pending

DEVELOPMENT STAGE

- Experimental proof of concept



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TECHNICAL SPECIFICATIONS

Oxalates $M^{n+}_{2/n}(C_2O_4)^{2-} \cdot x H_2O ; (x \geq 0)$	Cations M^{n+} (M= Fe, Co, Ni, Cu, Ag, Sn, Bi...)
Ex. of metals or alloys resulting from the manufacturing process	Fe, Co, Ni, Cu, Ag, Sn, Bi... or alloys
Ex. of oxides resulting from the manufacturing process	Fe_2O_3 , ferrites mixtes, Bi_2O_3 , SnO_2 ...
Layers thickness	Micrometric ($>5\mu$)

LABORATORIES



CONTACT

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