

Photocurable formulation for the design of highly conductive and reflective metal top coating



This technology allows the coating of any surface with a highly reflective and conductive metal thin film.

KEYWORDS

Reflective
Metal
Conductive
Coating

PATENT

FR1460207

INVENTOR

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IS2M



TECHNOLOGY

Coating

Coating of the substrate with a formulation made of a polymerizable resin and metal ions

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UV curing

The formation of the metal thin film is triggered by the cure of the polymer and the photo-reduction of metal ions

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Final result

The final coating appears as a bilayer film
Top : highly conductive and reflective metal thin film
Bottom : a composite made of polymer and metal nanoparticles

INNOVATION ADVANTAGES

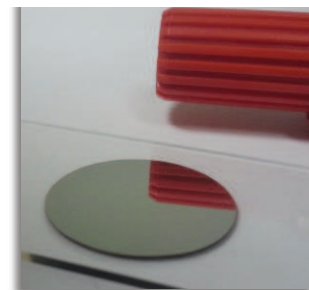
- Nanoparticles free formulation
- No solvent evaporation: acrylic monomer
- Cold technology
- Reduced cost: very low content in metal thanks to the ionic-based formulation
- Broad range of available metals: Ag, Au, Cu, Pd, Pt, Al ... or any mixture of

COATING PROCESS

- Suitable for spray and printing technologies: fully tunable viscosity
- Quick coating: from seconds to few minutes
- Works on any surface, including: aluminium, brass, glass, paper, plastic, stainless steel, textile, wood...

COATING

- Mirror like surface: high reflectivity
- Conductivity: preliminary shown an apparent resistivity of $1.6 \times 10^{-3} \Omega.m$
- Anti-microbial activity: using of Ag and Cu
- Peeling resistance: tape test ok
- Hardness: pencil test ok
- Flexibility: conservation of the substrate flexibility



DEVELOPMENT STATUS

- The project will focus on the testing the coating stability and resistance to industrial processes

Partnership : Seeking partners for co-conception on project COMET

CONTACT

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