

# 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

Lavinia BALAN

IS2M

## TECHNOLOGY

### Coating

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

>>>

### UV curing

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

>>>

### 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

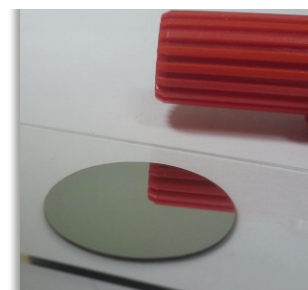
- Nanoparticles free formulation
- No solvent evaporation: acrylic monomer
- Cold technology
- Reduced cost: very low content in metal thanks to the ionic-based formulation
- Broad range of available metals: Ag, Au, Cu, Pd, Pt, Al ... or any mixture of

### 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

Mariya Savinova

Business Developer (Chemicals - Materials - Medical Devices)

Tél. : +33 6 10 07 00 19 - e-mail : mariya.savinova@satt.conectus.fr

Parc d'Innovation

650 Bd Gonthier d'Andernach

67400 ILLKIRCH - FRANCE

[www.satt.conectus.fr](http://www.satt.conectus.fr)