

Client Ref. BPE

We are working with an established global manufacturer of engineered mechanical fixtures and hardware components for the building and construction industry. Our client is actively seeking innovative coating and finishing technologies for current and new substrates to enable them to significantly improve on the durability, performance, aesthetics and sustainability of their current product and manufacturing processes.

Challenge

The current manufacturing process involves die casting of the components which are mainly zinc, although other substrates and manufacturing processes are also employed. These components are then electroplated with copper which makes the surface more uniform, assures good electrical conductivity and enhances adhesion of other coatings. Subsequent nickel plating provides a superior corrosion resistant barrier, and then a range of decorative finishes can be applied thereafter. This combination of conventional processes however, is complex, lengthy, costly and often results in the generation of hazardous and environmentally detrimental waste products.

Solutions

Our client is therefore seeking a novel process and technology to improve the mechanical, functional and decorative finishes of their current components, or allow the use of alternative (lighter/cheaper) materials (e.g. aluminium, brass, engineered plastics) whilst minimizing hazardous waste and lowering production costs. Solutions will be required to:

- Satisfy end-user expectation of quality die cast decorative finishes such as: chrome, gold, satin, bronze, graphite, nickel and their derivatives (brushed, polished, distressed, etc.)
- Meet performance durability tests: UV stability, corrosion resistance (1000 hours neutral salt spray and ASTM G85 1000 hours prohesion resistance); scratch resistance (5H) and coating adhesion (crosshatch)
- Be applicable to a variety of substrates including: aluminium, stainless steel, zinc, brass and polymer composite substrates and components formed by die casting, forging, extrusion, injection moulding etc.
- Be cost effective and scalable i.e. feasibly applied to the manufacturing of circa 10 million components annually and deployable globally
- Reduce the environmental impact in comparison to existing electroplating methods

Solutions of interest may include but are not limited to:

- Novel PVD technology - especially those not requiring the use of electroplating to prepare substrate
- Improved powder coating technologies
- Laser-assisted coating technology
- Direct-to-metal UV-curable corrosion protection coatings
- Alternative process to electroplating (or green alternative)
- Semi-continuous processes to replace batch processing (e.g. quicker prevents oxidising and need for subsequent cleaning)

We are keen to review technologies and methodologies where proof of concept has been exhibited and which the aforementioned durability performance testing can be carried out to demonstrate improved benefits over existing process. Our client is willing to explore all reasonable commercial agreements including licensing, contract supplier relationships, joint development, etc. The client is happy to review opportunities from any sector (e.g. automotive), and geographical location.

Please get in touch and send preliminary questions and information on any proposed opportunity to the project leader for this search: - **Fatuma Baraza** (fatuma@strategicallies.co.uk). Thank you!

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