Efficient curing process with Infrared Radiation
RISE Research Institutes of Sweden

Personnel: 2700 persons (RISE) 190 (RISE IVF)
Size 3100 MSEK

Products/Services/Technical areas

RISE is the Swedish Research Institute and innovation partner. In international collaboration with industry, academia and the public sector, we ensure the competitiveness of the business community and contribute to a sustainable society. Our 2,700 employees support and promote all manner of innovative processes. RISE is an independent, state-owned research institute that offers unique expertise and about 100 testbeds and demonstration facilities, instrumental in future-proofing technologies, products and services. www.ri.se

RISE IVF is a research institute with facilities, knowledge and long experience within the areas of painting and curing process development, polymeric materials and chemical analysis etc. RISE IVF has a well established collaboration with the Swedish powder coating industry (many SME:s) as well as many other painting companies.
Vision:
To develop process technology which will enable use of shortwave IR technology as only curing method/technology for industries using in line painting and curing processes.
Infrared curing provides a direct thermal activation of the coating, with a reduced thermal exposure of the component, which can be crucial in case of temperature sensitive components such as plastic, composites, wood, among others.
Shortwave IR leads to a more robust production process reducing the risk of quality variations.
**Motivation:**

- Reduction of energy consumption and process time.
- Decrease heat exposure to sensitive products
- Increased robustness of the coating process
- Impact assessment for IR curing compared to existing curing process
Content:
The project will investigate use of shortwave IR as curing technology of painted surfaces (powder and liquid coatings) and sealants for substrates prone to material deformation or properties deterioration due to exposure of high temperatures.
The project will also evaluate the possibilities of Selective curing (curing of specific areas of a component) and Customized curing (optimal selection of wavelength interval for type of paint and substrate).
Furthermore, surface properties, coating quality and degree of curing compared to conventional drying will be evaluated.
Expected outcome:

Benefits:
- Reduction of energy consumption and process time.
- Decrease of thermal exposure to heat sensitive products.
- Increased robustness of the coating process.
- Coating properties enhanced: adhesion, gloss, ...
- Process cost reduction.

Impacts:
- Increased productivity for the painting and curing process and
- Reduced carbon footprint due to shorter curing times compared to a conventional drying process based on thermal convection.

Schedule:
Duration: 1 year or more
PARTNERS

Current Consortium: list of partners already involved in the project

IGP - Powder Coating supplier
Hedson/IRT - IR manufacturer
RISE IVF – Research Center
SAAB Aeronautics - Advanced development of military and civil aviation technology

Partner search:
• End users: furniture
• End users: aerospace
CONTACT INFO

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