

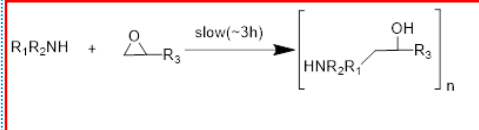
Fast epoxy-amine photopolyadditions

- ➔ New photoinitiating system capable of accelerating the curing of epoxy amine resins on demand under LED irradiation
- ➔ New formulation system allowing a very short curing time (minutes vs. hours) with a full conversion of epoxy functions

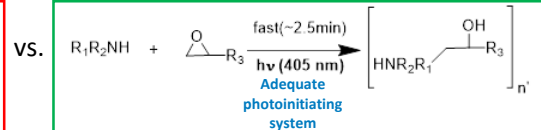


TECHNOLOGY

- The EPAMINE technology makes obtaining **epoxy-amine resins by polyaddition photopolymerization technique**, not possible up to date
- The addition of an adequate **photoinitiator** and a **photosensitizer** to the formulation system together with **LED irradiation** is able to initiate the polymerization **very fast** and to reach a **full conversion of epoxy functions**



Classical polymerization of epoxy-amine resins



Polymerization of epoxy-amine resins under LED irradiation and with an adequate photoinitiating system

KEYWORDS

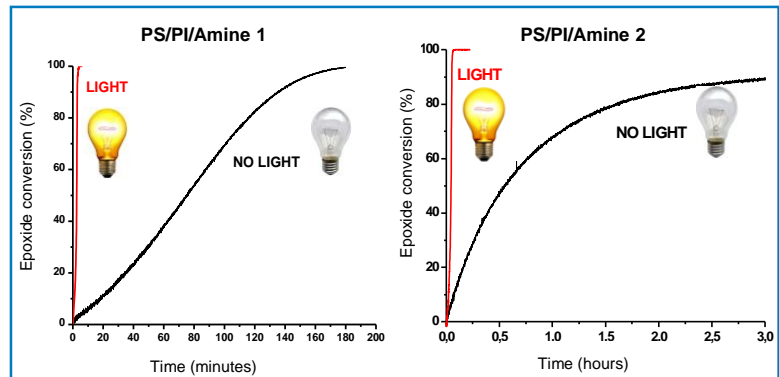
- Adhesives
- Coatings
- Composites
- Dye
- Photoinitiator
- Photopolymerization
- Epoxy-amine resins

PATENTS

- EP18306272.8
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INVENTORS

- Jacques Lalevée
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CNRS-UHA UMR 7361



Comparison between a non-irradiated system which cures in several hours and the photoirradiated innovative system (right) which cures in less than 3 minutes.

INNOVATION ADVANTAGES

- Highly competitive adhesion properties on most surfaces/substrates
- No VOC release
- Rapid and easy process at room temperature
- Tunable work life
- Safety and low energy sources
- Long storage (pot lifetime)
- Low device costs and high polymerization rates

TECHNO-STATUS

- **Under Development**
290 000 euros of Conectus investment for proof of concept
- **Ongoing 22-months project**
Targeted TRL 6

APPLICATIONS

- High performance adhesions
 - Transport, construction...
 - Structural adhesive
- Composite materials

DEVELOPMENT STATUS

- Proof of concept of the technology under an ongoing investment program
- Open for an industrial partnership for co-development