AZM:

A new concept combining light curing and Michael addition for roofing applications

- **Combination of aza-Michael addition and light-curing to generate thick polymer layers exhibiting high elongation at break**
- **A versatile and effective pathway for the creation of waterproof and rubbery materials**

KEYWORDS

- Click chemistry
- Photopolymerization
- Acrylates and amines
- Aza-Michael addition

PATENTS

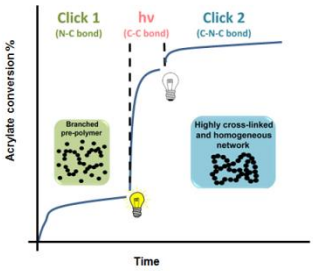
- EP15306146
  July 6th, 2015

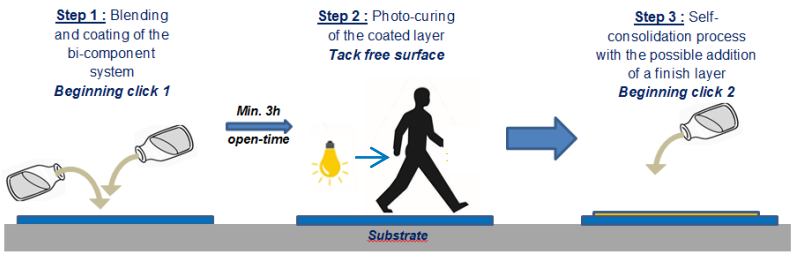
INVENTORS & LAB

- Matthieu Retailleau *et al*.
  Université Haute Alsace
  LPIM EA 4567

TECHNOLOGY

- An **innovative** bi-composant polymerization technology combining sequentially **two different chemical reactions** offering a safer and more ecologically friendly alternative to classical polyurethane processes.
- Combination of an in-situ Aza-Michael addition and a photopolymerization.
- **Step 1:** pre-polymer formation, liquid malleable formulation with min. 3h open-time.
- **Step 2:** light curing, fast acrylate photopolymerization conducting to a dry, walkable, coating formation in a few seconds.
- **Step 3:** slow post-consolidation leading to a highly crosslinked 3D polymer network and consumption of the residual unreacted acrylates.





Retailleau M. et al. (2015), ASC Macro Lett., 4, 1327-1331; DOI: 10.1021/ascmacrolett.5b00675
Retailleau M. et al. (2016), RSC Adv., 6, 47130-47133; DOI: 10.1039/c6ra07610f

INNOVATION ADVANTAGES

- **Peroxide free system** with high flash point resin (security of use and storage)
- **Solvent free system** with low VOC during the processing, **smell free**
- **Controllable open-time** through UV curing process, **pot-life** at least 3h
- **Low energy curing technology** based on LED light source
- Allows the polymerization of **thick surfaces** (up to 2 mm)
- Compatible with **fillers and pigments**
- **High elongation properties** of the final material between -10°C and 23 °C (**up to 1000%**)

TECHNO-STATUS

☐ **Under Development**
290 000 euros of ongoing Conectus investment for proof of concept

- planned project end date:
  Proof of concept achieved

☐ **Ready to market :**
open for licensing

APPLICATIONS

- Waterproof and rubbery materials with less than 4% water up-take after 1 month storage in water.
- Applications:
  - Roofing
  - Flooring
  - Insulation cables
  - Sealing

DEVELOPMENT STATUS

- Proof of concept of the technology has been achieved for roofing.
- Scale-up on large surface demonstrated.

CONTACT I Veronika VALLION● Business Developer ● veronika.vallion@satt.conectus.fr ● +33 (0)6 10 07 00 19

CONECTUS ● Parc d'innovation ● 650 bld Gonthier d'Andernach
67400 ILLKIRCH ● France ● Tel. +33 (0)3 68 41 12 60
www.conectus.fr

OT_X_Allonas_2019_1