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## POPCOM platform: Composites Advanced Manufacturing

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► **To cite this version:**

Patricia Krawczak, Mylène Deleglise-Lagardere, E. Lafranche, Cosson Benoit, Chung-Hae Park. POPCOM platform: Composites Advanced Manufacturing. Journée Industrielle "Matériaux haute performance et écomatériaux dans les transports", May 2019, Paris, France. hal-02270668

**HAL Id: hal-02270668**

**<https://hal.science/hal-02270668>**

Submitted on 26 Aug 2019

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### TPCIM

Technologie des  
Polymères et  
Composites &  
Ingénierie Mécanique

# POPCOM Platform

## Composites Advanced Manufacturing

**POPCOM Composites Advanced Manufacturing Platform:** Original facilities for development and industrialization of structural composites and reinforced polymers, embracing the whole chain of product life cycle ... the "Swiss Army Knife" of composites

- A technological platform dedicated to a **wide span of advanced manufacturing processes for both thermoplastic or thermoset polymer composites:**
  - **Stamping / Thermo-compression moulding** (1200 kN, up to 450°C, up to 10°C/min heating & cooling, 600 x 600 mm plate size, up to 450 x 450 mm part size depending on mould type)
  - **Liquid Composite Moulding**, e.g. RTM, Thermoplastic RTM, C-RTM, VARTM, Infusion (mono- or bi-component thermosets or thermoplastics injection units up to 50 bars and 170°C or 350°C, depending on the equipment and material system configuration)
  - **Automated fibre placement** (preforming, fibre/tape laying) / **Filament winding**
  - **Autoclave** (up to 400°C, 30 bars and 700 x 1300 mm<sup>2</sup> part size)
  - **Thermoplastic overmoulding**, IR oven heating, LFT or BMC **injection-moulding** (200-350T)
  - **Laser welding**
- Different **prototype moulds with complex geometries for demonstrator fabrication**. Pressure and temperature modulated by computer programming.
- **In-house numerical simulation codes** (3D resin flow simulation, numerical computation of mechanical properties of textile composites considering manufacturing defects)

### Suitable for a wide range of materials and application markets

- **Matrices:** Thermoplastics (PP, PA, PET, PBT, PEEK, PEKK, Elium<sup>®</sup>...), thermosets (EP, UP, VE, PF, benzoxazine ...)
- **Fibres:** glass, carbon, aramid, flax, basalt, hybrids ...
- **Reinforcement architectures:** UD, NCF, mats & non-woven fabrics, woven & knitted fabrics, prepregs, GMT, commingled, film stacking, LFT pellets, BMC compounds, SMC ...
- **Markets:** auto, aero, rail, marine, sports & leisure, electric/electronics, construction, energy ...

### Stakeholders



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### POPCOM platform

[youtu.be/ZF5E9gUmaxM](https://youtu.be/ZF5E9gUmaxM)

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Autoclave

Thermocompression & Resin Transfer Moulding (incl. C-RTM, RTM-TP, VARTM)



Automated dry fibre placement

Injection-moulding & overmoulding (LFT, BMC, sandwich ...)



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Project co-financed by the European Union with the European Regional Development Fund