



LOIRETECH INGÉNIERIE

INDUSTRIALIZATION OF COMPLEX
COMPOSITE PARTS

From R&D to Mass Production: the on-going
journey of Thermoplastic Composite



Presented By:

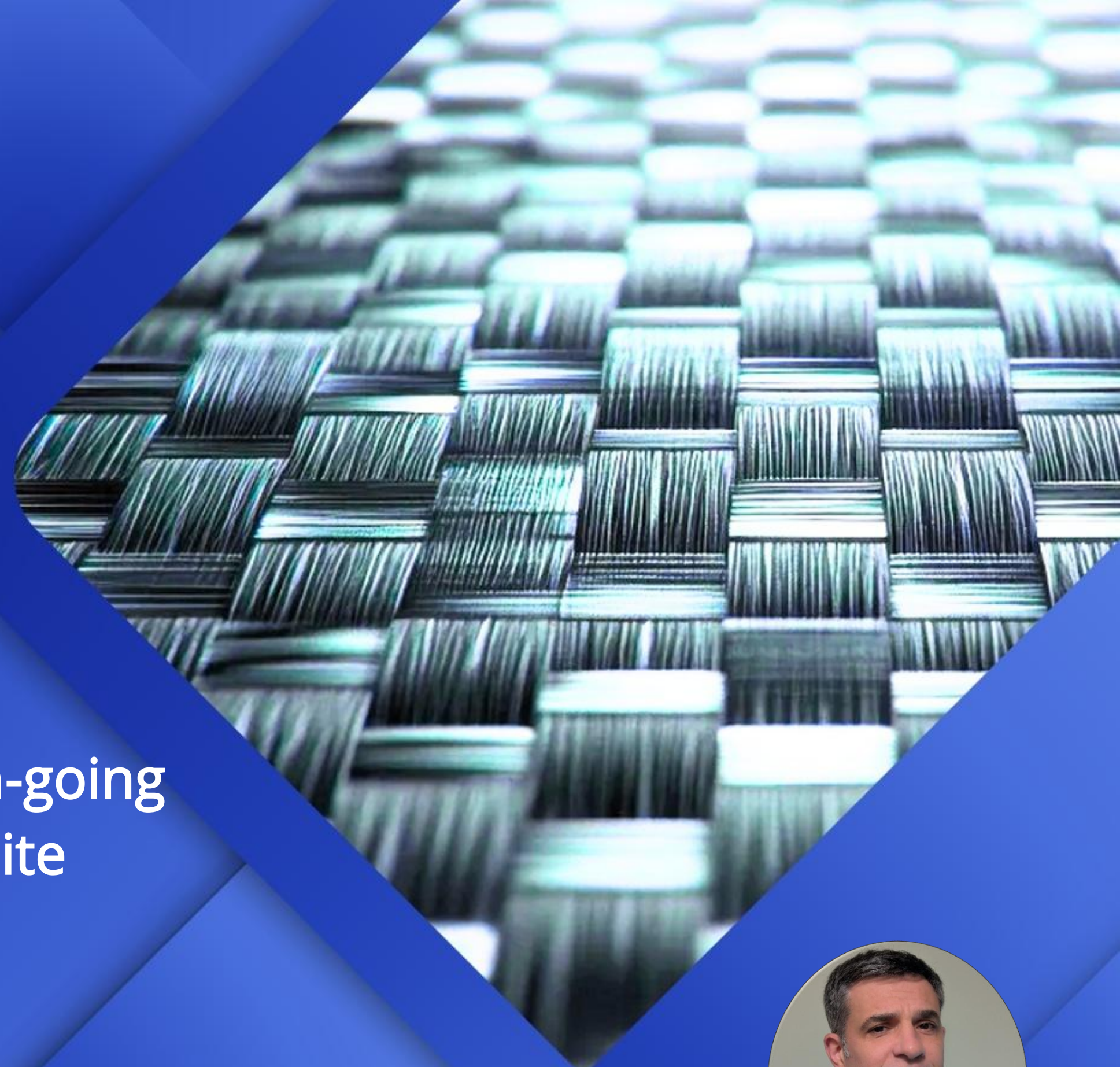
Franck Bourcier

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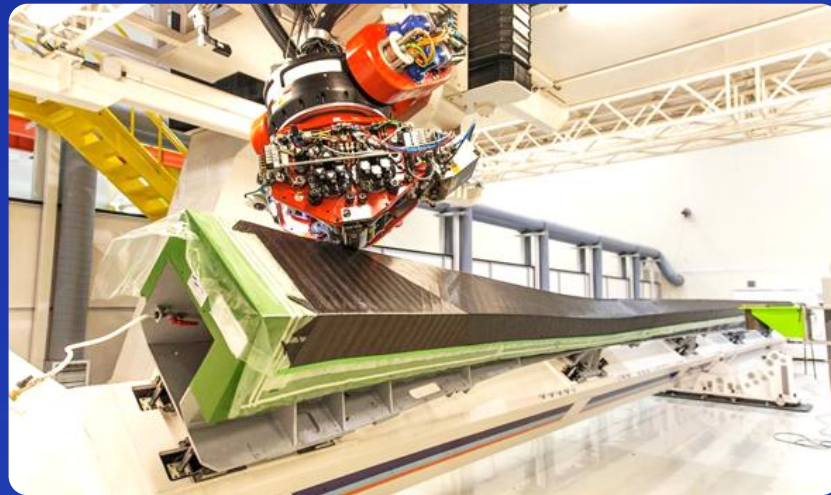
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LOIRETECH IN A NUTSHELL

Industrialization of high-performance composite parts

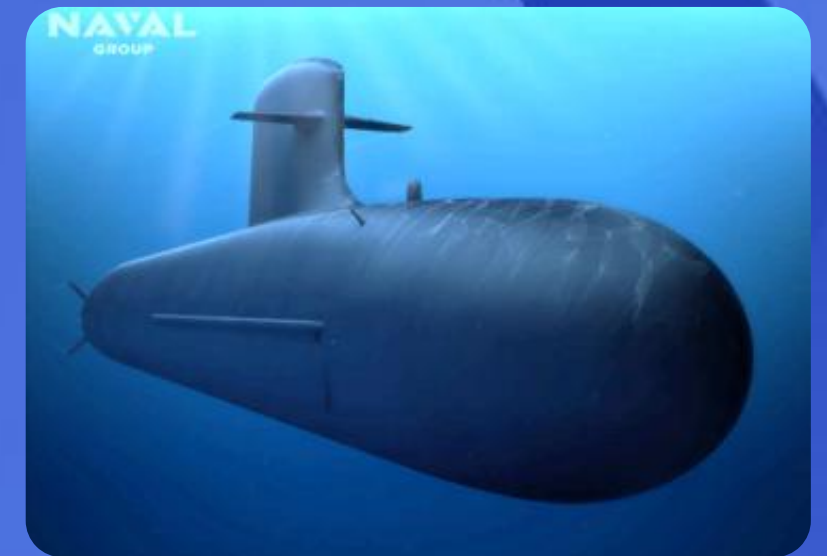
Preforming tooling



Composites tooling



Metallic tooling



Stretch forming tooling

Milling fixtures

Production lines

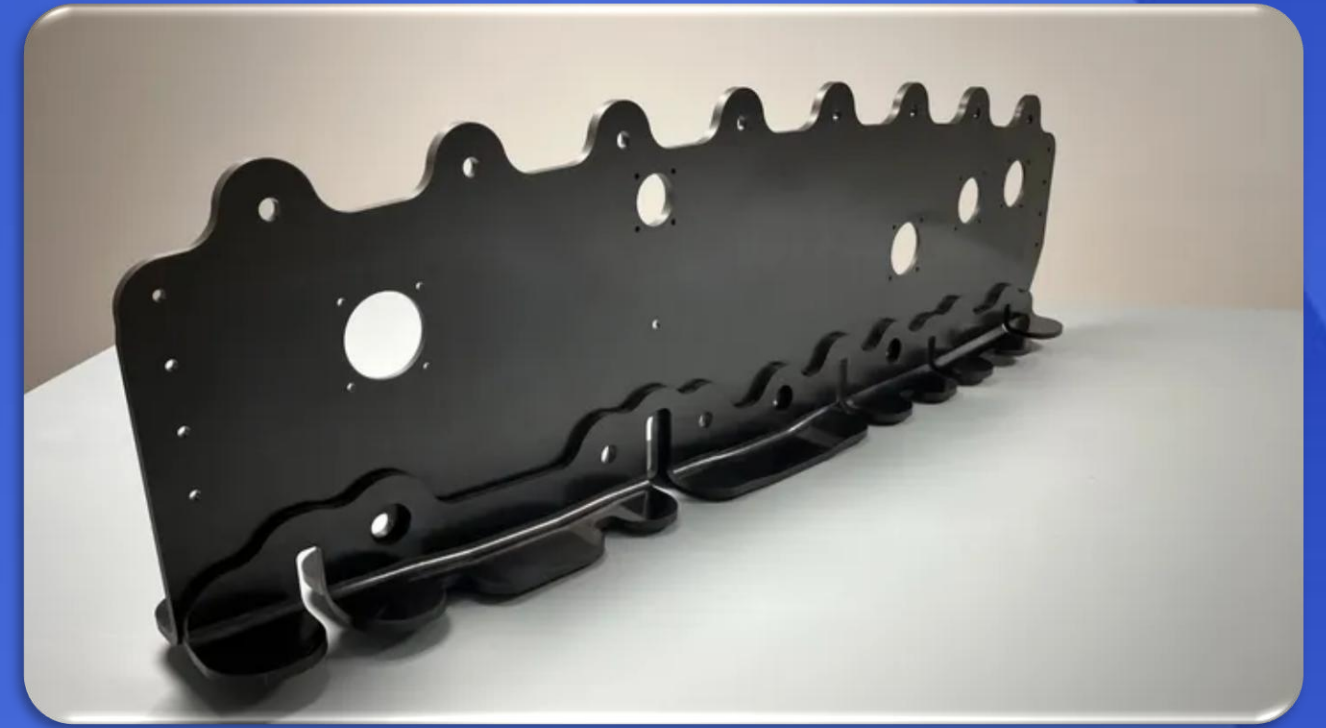
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Current flying technology (Out of R&D):

- Stamping for ribs, cleats, brackets

Advantages & Drawbacks:

- + Lightweighting
- + Recyclability
- Thickness variation
- Buy to fly ratio



Courtesy of Daher

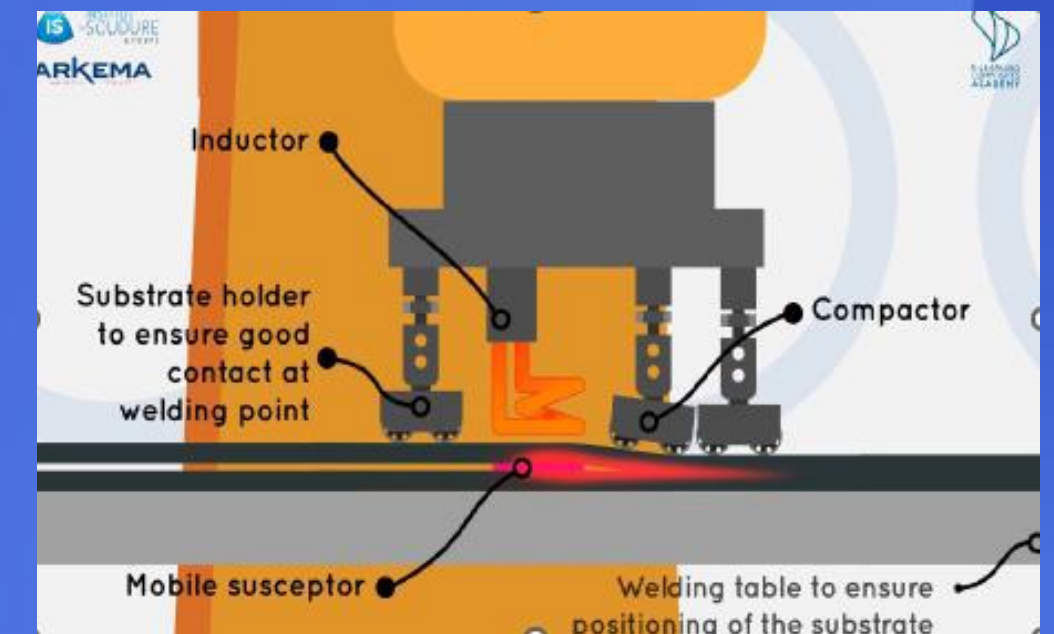
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Next step technologies:

- QSP®: Evolution of direct stamping enabling thickness variation, improvement of buy to fly ratio, functions integration
- AFP: Automated Fiber Placement
 - Optimized raw material scrap
 - Post consolidation or In-Situ consolidation (highly degrading deposition rate)
- Assembly by welding (one fits all is not possible):
 - Ultrasonic welding: long joining
 - ISW: joining
 - Induction welding: intermediate welding
 - Induction conduction: short & intermediate welding

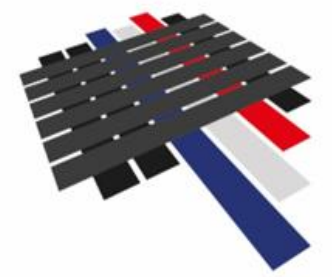


Courtesy of Cetim

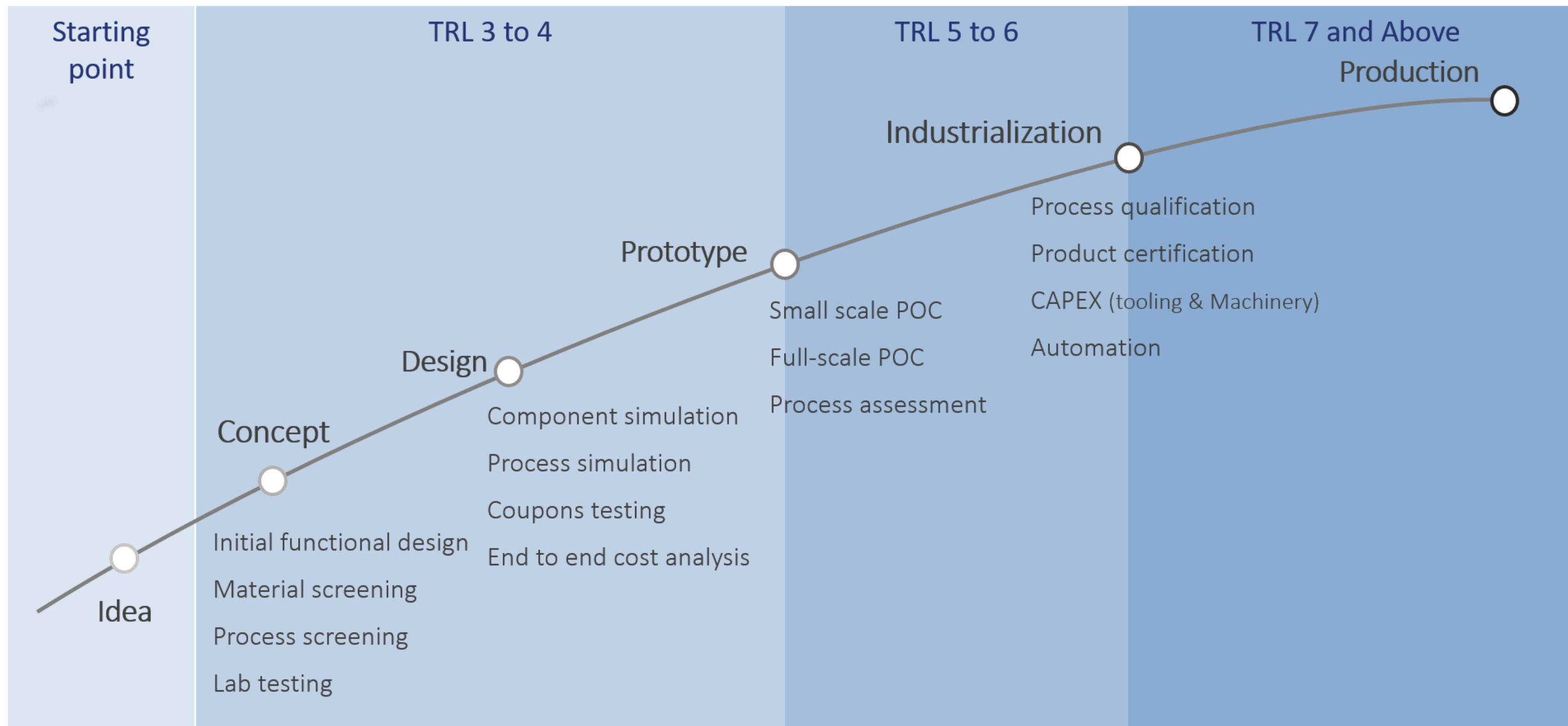


Courtesy of Institut de Soudure

Composite TP Team = One shop stop for industrialization of thermoplastic composites



Composites TP Team



Adaptable knowledge sharing to promote industrialization for high performances thermoplastics

CETIM

CORIOLIS

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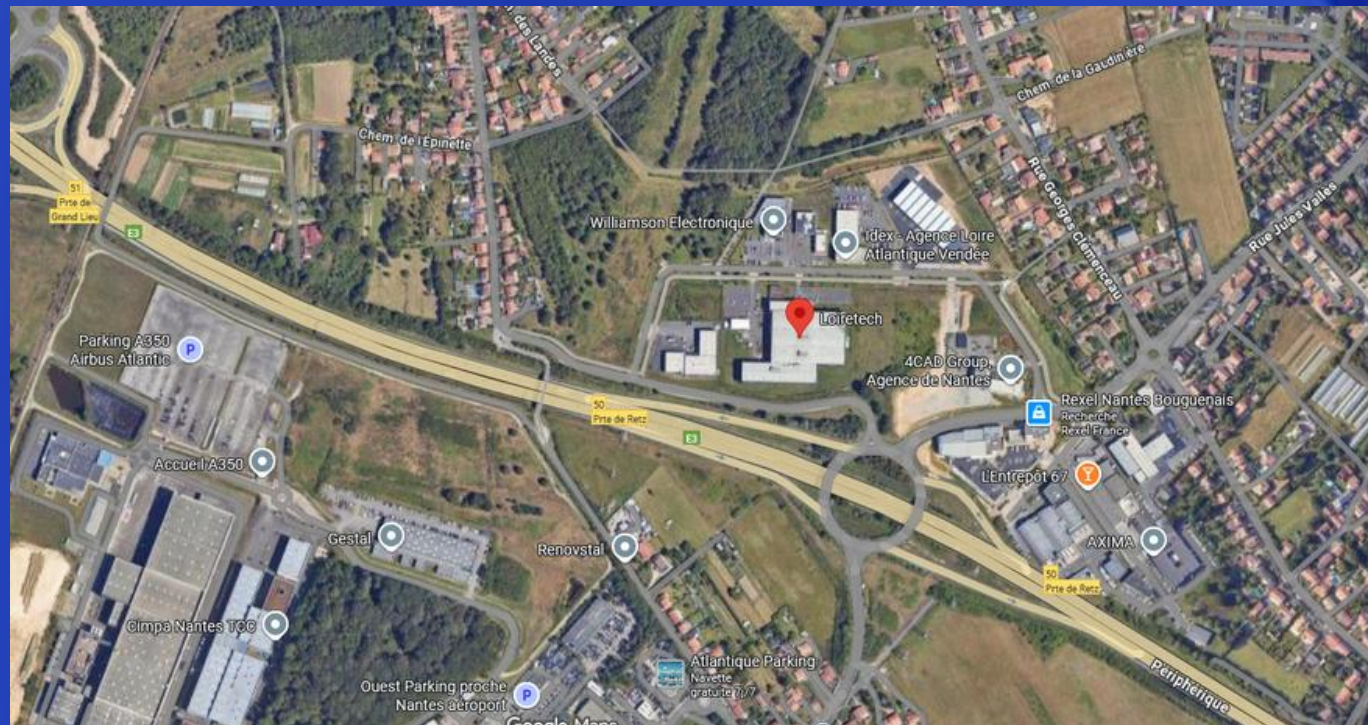
IS INSTITUT de SOUDURE GROUPE



HOW TO CONTACT US



Loiretech Ingénierie
9 rue du Moulin Cassé
Pôle Industriel Jules Verne
44340 BOUGUENAI
FRANCE



Loiretech Canada
830 12e Avenue
Saint-Lin-Laurentides
QC J5M 2W1
CANADA



Franck Bourcier
Mobile : +33 6 63 18 09 02
Mobile : +1 438 340 9160
franck.bourcier@loiretech.com

