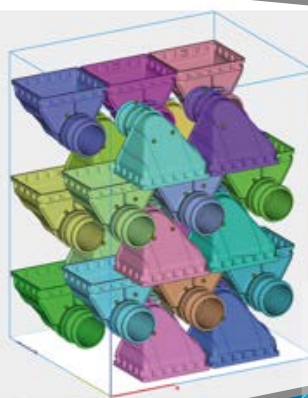
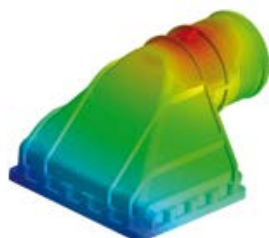


# ADDITIVE MANUFACTURING: KEY SUCCESS FACTORS FOR SERIAL PRODUCTION OF POLYMER PARTS

3 & 4 APRIL 2019

ISARA Lyon – AGRAPOLE – 23, rue Jean Baldassini – 69007 LYON (France)



SFIP, INSA Lyon and IMT Lille Douai, with the support of SF2M Sud East, are organising on **3 & 4 April 2019 in ISARA (Lyon)** a colloquium devoted to the serial production of polymer parts by additive manufacturing.

Since the last colloquium in 2016, materials and technologies have evolved rapidly, as has the production of metal printed parts, which makes it possible to consider the serial production of polymer parts for various applications: transport, medical, housing, sports and leisure and other industrial applications.

**The transition from prototype production to serial production implies three major and unavoidable requirements:**

- a precise understanding of the behaviour specific to polymer materials, based on both experimental and theoretical modelling approaches,
- control of production tools with the integration of reliability, repeatability, productivity and HSE criteria,
- the consideration of expected performances for applications thanks to the redesign optimized for 3D, simulation and training.

This colloquium will be an opportunity, three years after the first edition, to measure the progress made in the additive manufacturing sector and in particular to make an initial assessment of the current situation regarding the serial production of polymer parts.

## Scientific Committee

### SFIP

Jean-Marie Maldjian, Schneider Electric,  
Nathalie Pécoul, AddUp,  
Stéphane Ravassard, Groupe PSA

### INSA Lyon

M'hamed Boutaous, SF2M

### IMT Lille Douai

Jérémie Soulestin

Dominique Giannotta, Solvay

## Organisation contact

**Chantal Sohm** - SFIP

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[chantal.sohm@sfip-plastic.org](mailto:chantal.sohm@sfip-plastic.org)

Organised by:

With the support of:

## PROGRAMME – Day 1 – Wednesday 3 April 2019

08:45 WELCOME COFFEE

09:15 **Colloquium opening by SFIP, INSA Lyon and IMT Lille Douai**

09:30 **Opening lecture**  
**Additive Manufacturing at Renault Trucks / Volvo Group**  
 Renato LIARDO, Volvo Trucks, Materials Technology Departement

### Session 1 MATERIALS

Chairpersons:

Noëlle BILLON, Mines ParisTech, and Nathalie PÉCOUL, AddUp

10:00 **3D printer filaments for industrial applications**  
 Joanna MARGUIER, Clariant

10:30 **High temperature nylons for SLS: material innovations and part performance prediction**  
 Elodie SEIGNOBOS, Solvay

11:00 **3D SLS printing of PA12; thermal history and mechanical properties**  
 Noëlle BILLON, Séverine BOYER, Christophe PRADILLE, Jean Luc BOUVARD, Lionel FREIRE, CEMEF, Mines ParisTech

11:30 **Development of thermoplastic elastomer filaments for 3D printing**  
 Gakuji SHIN and Frédéric DAVID, MCPP

12:00 **State of the art composite material developed for the fused filament fabrication of functional parts**  
 Emmanuel VAQUANT and Maxim PIEROT, Owens Corning Chambéry International

12:30 LUNCH AND EXHIBITION VISIT

### Session 2 PERFORMANCES

Chairpersons:

Jean-Marie MALDJIAN, Schneider Electric, and M'hamed BOUTAOUS, INSA Lyon

14:00 **Numerical modeling and thermal analysis of the SLS process**  
 M'hamed BOUTAOUS, Aoulaiche MOKRANE and Shihe XIN, INSA Lyon

14:30 **Advanced simulation to leverage the true Additive Manufacturing potential**  
 Sylvain MATTHIEU, e-Xstream engineering

15:00 **Numerical study of the plastification of an amorphous polymer in a hot end extruder of a 3D printer**  
 Franck PIGEONNEAU, Michel VINCENT, Jean-François AGASSANT, CEMEF, Mines ParisTech

15:30 COFFEE BREAK

16:00 **Fatigue characterization of additive materials**  
 Thomas PEAN, Mecastyle

16:30 **Functional Materials for 4D printing**  
 Pierre-Jean COTTINET, Minh-Quyen LE, Jean-François CAPSAL, INSA Lyon

17:00 **Polymeric additive manufacturing for automotive applications: the keys to successful integration**  
 Philippe GERMETTE, Groupe PSA

17:30 END OF DAY 1 COLLOQUIUM

20:00 DINNER AT RESTAURANT ARGENSON GERLAND  
 40, ALLÉE PIERRE DE COUBERTIN – 69007 LYON

## PROGRAMME – DAY 2 – Thursday 4 April 2019

08:00 BREAKFAST

### Session 3 PROCESS/PRODUCTION

Chairpersons:

Dominique GIANNOTTA, Solvay, and Jérémie SOULESTIN, IMT Lille Douai

08:30 **Biomimicry: context and opportunities**  
Luce-Marie PETIT, CEEBIOS

09:00 **3D printed resin cavities for injection molding: current capabilities and improvements for low volumes production parts**  
Nicolas CHAUVE, SOPRINJEC, and Jean-Marie MALDJIAN, Schneider Electric

09:30 **Innovation and additive manufacturing - how to support companies in part design: audit, training, simulation and support**  
Sébastien DESBOIS and Nicolas CORNU, VISIATIV

10:00 COFFEE BREAK

10:30 **Which grades of ABS for fused deposition modeling?**  
Thomas JOFFRE, Haythem HOUICHI, Julien BAJOLET, P.J.J. DUMONT, IPC

11:00 **Metal additive technology dedicated to high tech molds**  
David MULLER, Pierre PAYS, ADDUP

11:30 **Polymer extrusion 3D Printing for health and advanced materials applications**  
Germain FAUNY, Plateforme 3d.FAB

12:00 LUNCH AND EXHIBITION VISIT

Chairpersons:

Stéphane RAVASSARD, Groupe PSA, and Thomas JOFFRE, IPC

13:30 **Key factors for using the full potential of the Fused Filament Fabrication technology (FFF) in tooling and mass production**  
Jean-Michel LUCAS, Cylaos

14:00 **Optimisation of additive manufacturing of polyolefins parts using Freeformer process**  
Jérémie SOULESTIN, IMT Lille Douai

14:30 **Breaking down barriers to 3D printing adoption through materials innovation**  
Xavier TRESSEL, HP

15:00 **Volkswagen optimises production chain with Ricoh's polypropylene**  
Kris VERELST, RICOH Belgium

15:30 CLOSING REMARKS

16:15 END OF THE COLLOQUIUM

\*No simultaneous translation  
The oral presentations will be in French and the slides in English

## GENERAL INFORMATION



### VENUE

The colloquium will be held at school ISARA Lyon, in Gerland district, in the South of Lyon. Access is direct from Lyon's SNCF station, Part Dieu by metro, 25 minutes to get to the school. The conferences will be held in the amphitheatre n°1.

#### AGRAPOLE ISARA LYON

23, rue Jean Baldassini  
69007 LYON (France)

### Parking

Park at TCL car park, close to school ISARA.

### Access by subway

**Line B:** direction Gare d'Oullins from station Lyon Part Dieu - Stop **Stade de Gerland**  
Then 7 minutes walking – Subway exit: Parc Relais TCL  
Cross the TCL car park, the AGRAPOLE - ISARA-Lyon building is opposite.

## DINNER OF 3 APRIL 2019

At the gates of the stadium and in the heart of the Gerland district, Restaurant Argenson Gerland invites you to relax in a warm atmosphere.

#### RESTAURANT ARGENSON GERLAND

40, allée Pierre de Coubertin, 69007 LYON (France)  
Tel. +33 4 72 73 72 73 - [www.argenson.com](http://www.argenson.com)



Restaurant private car park

Access by subway: station Stade de Gerland

## HOTEL ACCOMODATION CLOSE TO THE SUBWAY LINE B

### Best Western Créqui / Part Dieu

37, rue de Bonnel - 69003 Lyon  
Tel. + 33 4 78 60 20 47 - Metro station: Place Guichard

### Hôtel Mercure Lyon Centre - Gare Part Dieu

50, rue de la Villette - 69003 Lyon  
Tel. + 33 4 72 68 25 20 - Metro station: Part Dieu

### Hôtel IBIS Lyon Centre

51, rue de l'Université - 69007 Lyon  
Tel. + 33 4 78 72 78 42 - Metro station: Jean-Macé

### Appart'hôtel Citadines Part Dieu Lyon

91/95, rue Moncey - 69003 Lyon  
Tel. + 33 4 78 14 90 00 - Metro station: Place Guichard

### Appart CITY Lyon Gerland

175, avenue Jean Jaurès - 69007 Lyon  
Tel. + 33 4 37 37 25 25 - Metro station: Place Jean Jaurès

### Hôtel IBIS Lyon Gerland

246, rue Marcel Mérieux - 69007 Lyon  
Tel. + 33 4 72 72 63 63 - Metro station: Stade de Gerland

## EXHIBITION AND ADVERTISING

SFIP will organize an **exhibition** during the two-days event. Do not miss this opportunity to present your applications and inform participants about your products and services. Booths of 4 and 6 m<sup>2</sup> are available.

Be present in the brochure given to participants, by means of an advertisement.

**Information about exhibition and advertising - Contact: [chantal.sohm@sfip-plastic.org](mailto:chantal.sohm@sfip-plastic.org) Tel. +33 1 46 53 10 74**

## BULLETIN D'INSCRIPTION - REGISTRATION FORM

### COLLOQUE FABRICATION ADDITIVE : LES FACTEURS CLÉS POUR LA PRODUCTION SÉRIE DE PIÈCES POLYMÈRES

COLLOQUIUM ADDITIVE MANUFACTURING: KEY SUCCESS FACTORS FOR SERIAL PRODUCTION OF POLYMER PARTS

Ref:  
Colloque  
01 2019

#### MERCI DE COMPLETER ET RENVOYER CE BULLETIN A • PLEASE COMPLETE AND RETURN THIS FORM TO:

SFIP – Le Diamant A – F-92909 PARIS LA DEFENSE CEDEX - chantal.sohm@sfip-plastic.org - Tel: +33 (0) 1 46 53 10 74

Inscription en ligne si règlement par carte bancaire :  
Register directly on line if payment with credit card:

<http://www.sfip-plastic.org/inscription/lyon>

#### EN LETTRES MAJUSCULES • IN BLOCK CAPITALS:

M<sup>me</sup> / M<sup>rs</sup>  M<sup>lle</sup> / M<sup>s</sup>  M<sup>r</sup> / M<sup>r</sup>

Nom / Family Name: ..... Prénom / First Name: .....

Société / Company: ..... Service / Department: .....

Fonction / Position: .....

Adresse / Address: .....

Code Postal / Postcode: ..... Ville / City: ..... Pays / Country: .....

Tel: ..... Mobile: ..... Fax: .....

Email: .....

N° de TVA / VAT number: .....

#### Je m'inscris au colloque au tarif de • I register to the colloquium

Prix nets sans TVA (Association Loi 1901)

- 790 €** : Non Membre / Non member\*
- 640 €** : Membre SFIP / SFIP Member
- 490 €** : Universitaire, PME < 100 salariés / University professor & research, small firms < 100 people\*
- 340 €** : Universitaire adhérent SFIP / University professor & research Member
- 0 €** : Etudiant (uniquement conférences) / Student (only conferences) → envoi copie carte d'étudiant / student card copy required
- 0 €** : Conférencier (un seul par société par présentation) / Speaker free access (one by company by presentation)

#### Je confirme ma participation au dîner du 3 avril 2019 au Restaurant Argenson Gerland

Inscription validée à réception du règlement / Registration validated upon receipt of payment

\* Ce tarif vous offre la possibilité de devenir adhérent (en remplissant le formulaire de demande d'adhésion) SFIP → Rubrique Adhésions sur le site [www.sfip-plastic.org](http://www.sfip-plastic.org)

\* This rate offers you the possibility to become a member (by filling in the application form) SFIP → Adhesion section on the site [www.sfip-plastic.org](http://www.sfip-plastic.org)

Inscription validée à réception du règlement / Registration confirmation after payment

#### Paiement (Nous contacter si adresse de facturation différente) • Payment (Please contact us if the invoice address is different)

- Par chèque bancaire à l'ordre de SFIP / By check in Euros made payable to SFIP
- Par virement en euros payable à SFIP / By bank transfer in Euros made payable to SFIP

IBAN: FR68 3000 2008 5000 0000 5678 A81 – BIC : CRLYFRPP

Veillez indiquer votre nom et la référence / Please, precise your company name and reference: **Colloque 01 2019**

- Par carte de crédit en ligne / By credit card on line - (Visa, CB, Mastercard)
- Une commande va être envoyée / A purchase order will be sent

Date et signature / Date and signature

Cachet de l'entreprise / Company stamp

#### MODALITÉS D'INSCRIPTION

- Les frais d'inscription comprennent l'accès aux conférences, la documentation, les déjeuners et pauses, et le dîner du 3 avril 2019.
- Dans le cas où le règlement ne pourrait être joint, ce formulaire doit être accompagné d'un bon de commande officiel ; faute de paiement effectué au jour de la manifestation ou de la réception d'un bon de commande, l'accès aux conférences ne sera pas possible.
- Dès réception de votre inscription, nous vous ferons parvenir une facture. Merci de nous indiquer l'adresse de votre service comptabilité si nécessaire.
- Jusqu'au 4 mars 2019, vous pouvez annuler votre inscription par écrit. Au-delà, la totalité des frais restera due aux organisateurs. Les participants ont la possibilité de se faire remplacer, uniquement sur demande écrite.

#### REGISTRATION CONDITIONS

- Registration fees include participation in the conference, documentation, lunches and coffee breaks, and dinner of April 3, 2019.
- Where it is not possible to send the payment together with the form, each registration should be accompanied by an official purchase order. Failing reception of an official purchase order or payment on the day of the congress, we regret that you will not be allowed entry to the congress.
- When we have received the registration form, we will send you a confirmation message and an invoice. Please indicate the accounts department address when necessary.
- Till March 4, 2019 you can cancel your registration in a written form. After this date, the entire registration will be retained. Registered participants not able to attend may nominate a substitute and inform us in a written form.