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## A shared laboratory to model materials of the future

The Michelin Group and ICCF (Institut de Chimie de Clermont-Ferrand: Université Clermont Auvergne, SIGMA Clermont and CNRS) have inaugurated a joint public-private research laboratory called SimatLab dedicated to the modelling of polymers.



To accelerate the design of new materials, the ability to model them and simulate their behaviour is fundamental. This is the research field of SimatLab, whose goal is to establish a multiscale approach, from the atomic to the macroscopic scale, in order to interpret the properties of polymer materials based on their structure and behaviour at the atomic scale. The scientific challenge is to show the predictive nature of digital technology in the design of breakthrough materials. To meet this challenge, the laboratory will develop new methodologies and molecular simulation protocols on different types of model materials in order to validate the digital approach developed.



*The signing of the agreement to create SimatLab,  
May 22, 2017.  
Photo: Pierre Chambon*

SimatLab's steering committee comprises university faculty and Michelin Group representatives. ICCF's Patrice Malfreyt, a Université Clermont Auvergne Professor, and Benoît Schnell, an expert in the physics of polymer materials at Michelin Group, oversee operations.

SimatLab has enabled Michelin to step up the development of reliable, robust tools and simulation methods for the study of breakthrough materials, by bringing together researchers from France's



Auvergne-Rhône-Alpes region specialising in multiscale polymer simulation. SimatLab conforms to the Group's partnership strategy, which is highly focused on polymer material modeling and which has been developed over the past several years in order to intensify the Group's power and speed of innovation.

SimatLab has made it possible for ICCF to reinforce and perpetuate its polymer modeling activity while benefitting from the support of an internationally known group. Synergies between researchers from ICCF and Michelin, combined with the support of new staff specially recruited for this project, will allow ICCF to expand its research activities into new areas of application. This public-private partnership offers not only a true scientific challenge, but a source of enrichment for the future as well.

Today, the CNRS (France's National Centre for Scientific Research), its university partners and Michelin Group have three shared laboratories, and two other mature projects will soon be launched. In addition, the CNRS counts 30 to 40 contracts per year with Michelin Group as well as a framework agreement which simplifies and considerably accelerates the launch of new projects. Within the space of a few years, the CNRS has more than doubled the number of laboratories it shares with companies, from 55 in 2009 to 126 in 2017, located in France and across the world. Targeting more than 150 joint structures as of next year, it hopes to preserve and develop this model which enables public research organisations to work with economic stakeholders on a common programme. Thanks to these laboratories, the CNRS collaborates with major corporations such as Michelin, PSA, EDF, Thalès and Solvay.

## Contacts

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