

- [SITE UTC](#)
- [Newsletter](#)
- [Twitter](#)
- [Facebook](#)
- [Web TV](#)
- [EN](#)
 - [FR](#)
- [Search in interactions.utc.fr](#)

Name of the website

Menu

Menu complémentaire

Focusing

[on meaningful innovation](#)

- [Themes](#)
 - [Bio-mechanical and Bio-engineering sciences](#)
 - [Biology, Bio-chemistry and Bio-technologies](#)
 - [Process engineering; Chemistry; Sustainable development](#)
 - [Mechanical and Materials sciences & engineering; acoustics](#)
 - [ICTs: computer sciences; Automation & Control; Decision theory and applications](#)
 - [Technology, Social Sciences and Humanities](#)
 - [Multi-scale urban system modelling](#)
 - [Applied mathematics](#)
 - [Industrial Design](#)
 - [Pluridisciplinarity](#)
 - [Doctorate](#)
 - [Entrepreneurship](#)
 - [Prizes and Competitions](#)
 - [International](#)
 - [Campus life, art and culture](#)
 - [You have the floor](#)
- [Magazine](#)
 1. [Home](#)
 2. [Themes](#)
 3. [Bio-mechanical and Bio-engineering sciences](#)
 4. You have the floor Ms Salsac on vascular therapies

[Bio-mechanical and Bio-engineering sciences](#)

Articles

You have the floor Ms Salsac on vascular therapies

In the call for projects issued by the European Research Council (ERC) the project proposed by Anne-Virginie Salsac has been approved and selected, Nov. 28, 2017. This Council financially supports exploratory projects that potentially led to major scientific, technological and societal discoveries, where level of scientific excellence is assessed by international jury. New ideas at the interfaces of 'classic' scientific research specialties are particularly appreciated by the jury and the French proposal success rate stands at 15%. Through Anne-Virginie Salsac proposal, UTC benefits here from its first ERC grant. Below is a summary of her research work and achievements to date.

18 Dec 2017

You have the floor Ms Salsac on vascular therapies

Anne-Virginie Salsac and her research team at the UTC-BMBI Lab (bio-mechanics and bio-engineering) are investigating : fluid bio-mechanics as relevant to health issues.

Combining digital modelling and experimental work, the team has carried out modelling of flow phenomena: from micro-circulation paths to hemodynamics of major blood vessels. So, what is the challenge here? A-V Salsac answers *“By characterizing blood flows, from microcirculation to major vessels, we can help develop ways to optimize diagnosis of disorders and consequent therapeutic treatments via these vascular circuits”*.

The team is investigating endo-vascular therapies, a protocol which consists of moving bio-medical devices to a target zone via the blood vessels which enables a local treatment that is considered to be not very invasive. *“Our research work focuses notably on the use of microcapsules as vectors to transport active ingredients and on their behaviour when they interact with our body fluids,”* adds Anne-Virginie Salsac. *“How, for example, does the capsule envelope deform with the forces generated by these fluids? How can we control the release of the ingredients transported, by acting on certain mechanical characteristics of the envelope or by stimulating envelope rupture using ultrasonics? Sophisticated modelling and characterization techniques open the way to discover how to optimise these microcapsules as a function of the applications envisaged”*.

The team is also doing research on endovascular embolisms of abnormal vessels that therefore require “closing”. *“We launched a project on the clinical use of surgical glues, for example, to deal with certain arteriovenous malformations”*, details Anne-Virginie Salsac. *“What we have is an entanglement of small, very fragile vessels, hence a risk of serious haemorrhage. Injecting glues is a standard clinical practice, but there have not been many academic studies on this topic to date. So far, our knowledge-base here is largely empirical. There are some outstanding questions as to way the glue reacts, how it polymerases in contact with blood, etc. In order to gain a better mastery of this therapeutic act, we need to understand the associate and very complex phenomena better”*.

The research conducted by Anne-Virginie Salsac and her colleagues on blood flows and microcapsules are recognized as producing world-class results led to the award of three awards in 2015: the CNRS Bronze Medal and two trophies from Femmes en Or (Women in Gold), one for innovation and one from the public

vote, before this ERC grant, Nov. 28, 2017.

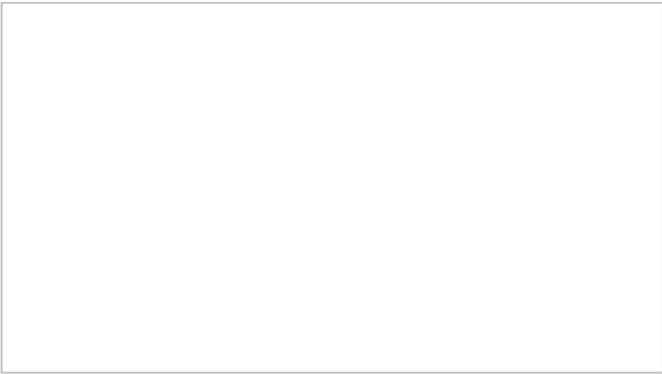
Read also on the same subject

[Science Fete 2017](#)



[Science Fete 2017](#)

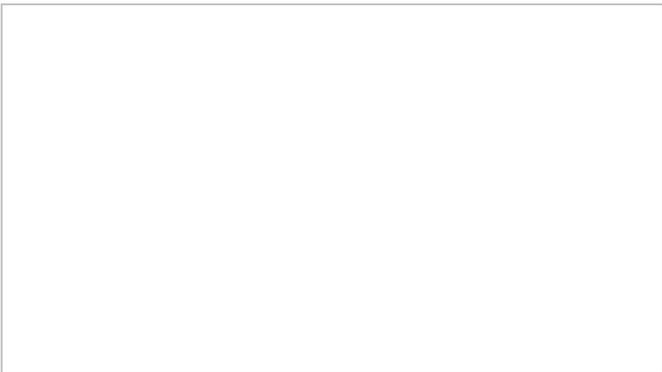
Articles



[Theme : : Bio-mechanical and Bio-engineering sciences](#)

[A.V. Salsac lauréate de la Médaille de Bronze CNRS 2015](#)

Articles



[Theme : : Bio-mechanical and Bio-engineering sciences](#)

[A.V. Salsac remporte le Prix de la Société de Biomécanique](#)

Web TV



[Un ERC Consolidator Grant pour Anne-Virginie Salsac](#)

[PDF](#)

[Share](#)

- [Facebook](#)
- [Twitter](#)
- [Linkedin](#)

[Reading](#)

[comfortPrint Français](#)

Magazine

The magazine is available in French and English

Dec 2017 • n° 45

Innovation pédagogique : l'approche UTC

- [Interactive version](#)
- [Download in french - PDF - 3200 Ko](#)

(Couverture) Interactions - Dec 2017 • n° 45

[Other magazines](#)

Subscribe to UTC interactions newsletters

Donnons un sens à l'innovation

Construite sur une pédagogie de l'autonomie et une recherche technologique interdisciplinaire orientée vers l'innovation, l'UTC forme des ingénieurs, masters et docteurs aptes à appréhender les interactions de la technologie avec l'homme et la société.

Avec ses 9 laboratoires de recherche et son ouverture internationale, l'UTC se positionne parmi les meilleures écoles d'ingénieurs dans le monde.

- [WEB-TV UTC](#)
- [Graduate](#)
- [Donation](#)
- [Contact the writing staff](#)
- [Credits](#)
- [Legal mention](#)
- [Cookies](#)