Suzanne Giasson is currently a professor in the Department of Chemistry and Pharmacy in Université de Montréal. She's teaching chemistry and her research field is about the study of surfaces and nanomaterials. However, she is not the usual chemist. As a matter of fact, she was not planning on studying sciences at all. She wanted to study music. But she was strongly advised to choose sciences over music since she was good at them. While looking for information regarding the sciences, she was interested in mathematics and physics. But since there were mainly men at that time, she chose process engineering. This particular field is interdisciplinary. It means that there are different components. There are mathematics, physics and chemistry.
With regard to her passion for music, she plays instruments such as violin, trumpet and guitar. She also sings. She recently succeeded in professionally joining both her passions, science and music. Indeed, she started a research project where the purpose is to observe the effects of the music, in particular, the rhythm, on nerve cells harvested from cell culture which was cultivated from skin cells. On this project, she is working with a psychologist, a neurologist. To go back to her being a student, she attempted two internships during two summers while being a student. One of her teachers wanted her to continue with an MSc in catalysis. During this degree, her supervisor helped her develop a network of contacts. Two PhD were proposed to her, one in Japan and one in Paris. Because of the cultural gap and the multidisciplinary nature of the subject she preferred to go to Paris. Her project changed a lot over the years so she always tells the students that even if they will specialize themselves over their studies they will never be limited to one specific topic. According to her, the most important thing to learn is the methodology. At the end of the PhD, she wanted to stay in Paris as she fell in love with the city but her teacher told her she was meant to be a professor and the academic career in France is very long because there is no work offer. According to him, the USA would be better.

Prof. Giasson used to often read scientific literature. One day, during a congress she went to have a chat with Jacob Nissim Israelachvili who wrote a very interesting paper. Then she applied to his laboratory in Santa Barbara for a post-PhD. Unfortunately, he had a monstrous amount of applications back then and no foundings to accept her. Nevertheless, she had a founding from Laval University in Quebec which wanted her as a teacher in the University. In exchange for this funding, Mrs Giasson promised to come to teach there after 2 years. Thus, she was able to work for two years in Santa Barbara with Mr Israelachvili.
Then, after a few years in Quebec, she met a colleague from Montreal who came to give a conference. He suggested her to give a conference in Montreal and to meet the direction of the University because according to him this University would need a teacher like her. Her first reaction was to say no because she pleased herself in Quebec. She reconsidered this proposition afterwards as Montreal offers more laboratories and more diversity in disciplines. Another motivation was that she ended up in the Chemistry department at Laval University and she does not consider herself as a chemist but as an engineer which is not the same. Now she is able to collaborate with different expertise which is extraordinarily inspiring and helpful.

Nowadays if she had an interesting offer she would not hesitate to leave Montreal but she did not plan to search for something else. Furthermore, she loves the city and considers herself Montréalaise even if she did not like the city that much at first sight. During the C'Nano congress, Professor GIASSON was supposed to talk about multi responsive surfaces made of polymers and multi hierarchical structures developed by her research group. This structure has been developed as a surface coating in order to use it in microfluidic systems. This surface coating will change their own properties by themselves depending on the environment where they are (light, current are some stimulus for example), this will allow for example to develop microvalves that will open more or less depending on this stimulus. For that, it is the polymers which the valve is coated that will swell or shrink depending on the environment allowing more or less fluid to pass through it. These kinds of multi responsive surfaces are already used in tissue engineering for cell growth, where the elasticity of the surface is used to direct the growth of the cells. The actual problem that professor GIASSON worked on with her team is that when the polymers surface property changes it often happens that it is not the wanted property that will change. For example, by changing the conformation of the polymers (polymer shrunk or swelled) it also changes the properties of the polymer such as the solubility in the solvent or the wettability of the polymer.

So for that, there is an idea from professor GIASSON to develop polymers that allow controlling only one parameter. The main idea is to have a main core polymer that will have a specific property and then add other molecules that will answer to another stimulus. This will allow control of what properties of the polymer we want to change and when to change it. Hence the name of multi hierarchical structures.
By going through her publications we noticed that she often used mica as support for her research in surface interactions. This expensive material is harvested in India, it is an aluminosilicate which has very particular cleavage planes. When the mica is cleaved, the surface is very smooth on a molecular scale, there is no roughness. Using atomic force microscopy, the quality of the surface can be observed. On this versatile support, several molecular species such as metal atoms or polymers can be grafted.

However, mica is an inert support which does not really create a covalent bond. Professor Giasson has developed on the advice of one of her collaborators a technique that allows the functionalization of mica by plasma activation. The protocol was developed with a thesis student Benoit Liberrel, it is called: Giasson-Liberrel protocol. One of our last questions was to know if there was one of the processes she developed that is used today in the industry. She answered no, but nevertheless, the elaboration of micro-fluidics was used to manufacture coatings. As the interview came to its end professor GIASSON pointed out during one of her answers, that in her beliefs communication and interaction between people working on different disciplines is one of the essential things, which are needed to have success in the field of research.

In the final minutes of our time together we stumbled upon one of the most genuine features of our interview subject. When asked the question: “What is it for you, apart from curiosity why you do the work you do?” She simply answered: “I do it because I would like to help humanity, I think this is just part of my nature.” It is quite interesting to see how professor GIASSON did not mention fame, money or any other benefits of being a great scientist but only her great curiosity and her willingness to help humanity. She also pointed out answering this question, that curiosity in any field of research is very important because having an understanding in any scientific topic is necessary to be able to improve in its field, and through curiosity comes a better understanding.

As the final question, professor GIASSON was asked whether she likes doing research or teaching better, as she does both of those. Her answer was that both are equally important to her, and she also pointed out that seeing the curiosity and the thirst for knowledge and understanding in her students’ eyes is the real payment for her.