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Flow Chemistry Highlights

Flow Chemistry Network

An Interview with Prof. Roger Marti

For this Flow Chemistry Column, we are happy to interview Dr. Roger Marti, professor of Organic Chemistry & Process Chemistry at the ChemTech Institute at HEIA Fribourg.

Flow Chemistry Network:
What brought you to the field of flow chemistry, and what made you stay and contribute to the area?

Roger Marti:
It started out of my interest in organic synthesis and how I can implement it sustainably in the lab and scale-up. The exciting thing is that you have to understand reaction mechanisms and kinetics in order to transfer a classical batch reaction into a flow process efficiently. I also enjoy the 'bricolage' aspect, *i.e.* assembling flow reactors and pumps or developing new reactors, which is especially interesting. All of this motivates me to continue working on flow chemistry.

Flow Chemistry Network:
To your mind, what have been the major developments in the field over the years?

Roger Marti:
Today I see flow chemistry as an established technology. We know how and where it can be used meaningfully with industrial applications in all possible sectors. This maturity is due in part to the availability of industrial equipment with a good integration of PAT and GMP.

Flow Chemistry Network:
What are the exciting innovations in the field today which you think could give it even greater impact?

Roger Marti:
In addition to new reactor systems for heterogeneous, high temperature or electrochemical reactions, for example, I see the integration of all possible aspects of AI into flow chemistry. I see a lot of potential here, also in automation, robotics, and miniaturization of flow set-ups.

Flow Chemistry Network:
What should a young researcher/industrial chemist keep in mind when embarking on using flow processing?

Roger Marti:
Having an open mind and a willingness to learn. Learning to start with a simple, straightforward flow set-up and then moving step by step to more complex systems and reactions. Also, as a chemist, exchanging ideas with chemical engineers in order to learn more about process technologies, engineering aspects and how to integrate them into flow chemistry.

Flow Chemistry Network:
Flow chemistry is already being considered as a mature technology. What is left to do to make this a standard tool for chemists and chemical engineers?

Roger Marti:
I see an important point in the integration of flow chemistry in the curricula of young chemists and engineers, not only in theory but also in practice. I think there is still a lot of potential to develop and provide simple flow set-ups and laboratory experiments, beginning as early as lab technician apprenticeship programs.

Would you like to propose a Flow Chemistry Highlight topic here?
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