

Report of the Interview with Prof. Paolo Melchiorre

Questions from Joan

Question: Why did you start studying chemistry in the first place? When did you first come in contact with catalysis and why do you think this field is so fascinating?

Answer: My father was a Chemist, so I was always exposed to chemical discussions as a kid. I was certainly biased to go in this direction and had a more scientific way to look at life from the beginning. For catalysis, I really enjoyed this type of work in my master's thesis, so this was really important to me when I met my supervisor for the Ph.D. in Bologna. They were working in the field of enantioselective catalysis and from there on I never left that field. As a Postdoc I went abroad to work on organocatalysis in Denmark. I came to this field by chance, but catalysis is something that I really loved beginning from the very first experience in the lab.

Question: There are many Ph.D. students who stay in the lab until late evening. What do you think of that, are they more productive because they are staying so long? What do you expect from your Ph.D. students?

Answer: The beauty of research is that you need to take your motivation from your interests. There might be some days when you are so taken by your research, that you dedicate many hours to it. But you need to remember that there also have to be some days where you can relax and do the things you love. In my group the rule is: you should organize your time as you think is best. I never ask anyone to stay longer or come in the weekend. But when the students decide for themselves that this is good for their project or themselves, they are free to do it. And keep in mind, sometimes one hour in the library can be more effective than four hours in the fumehood.

Question: How important do you consider research stays abroad? Do you think postdoctoral researchers should always go abroad or is it only important to gain postdoc experience at all, no matter where?

Answer: The most important point is to gain experience outside your comfort zone. This means you should change the type of chemistry you are doing to a field where you have less background knowledge. Then you need to acquire the new background and prove you can pick up on something that is new. Going to another institution might be sufficient, but experience abroad enriches you in another way. You have to leave two comfort zones at once and encounter difficulties in language and organization. You also get to experience a different culture and different points of view. I would personally recommend to go abroad but it is certainly not mandatory.

Question: What was the biggest mistake in your career?

Answer: Mistakes are part of your development, so I am not blaming myself too much for them. I think the most difficult part for me was the beginning of my independent research career. Before, I was alone in the lab and only responsible for the Chemistry I did. Once you become an independent researcher your job changes, now you are responsible for your people and should be a trainer for them. I had to learn it the hard way.

Questions from Maksime

Max: How do you stay motivated for such a long time?

In the beginning of your career, you have a lot of drive because you want to prove that you can reach a certain level. With the time the motivation changes and it becomes more important to take care about your research group, that it's doing well, that members of the group are growing. To be a good mentor is something that triggers me to stay motivated. But basically, the secret to keep the motivation for a long time is to find and to set different targets during your career. And, of course, research is a sort of hobby for me, that's something that I like and it costs nothing for me to keep in going. It's great luck when your hobby becomes your job.

Max: As a very experienced Researcher, which very promising topics of chemistry would you recommend to learn for the young generations?

Photochemistry, electrochemistry and organocatalysis are something that is already more or less well established but what I would still recommend learning. Besides that, I would suggest to look at the developments on artificial intelligence applied to chemistry. The robotic platforms and automation of processes in chemical synthesis is also a potential promising topic.

Max: What would you recommend yourself from your actual perspective if you would meet you at the very beginning of your career?

To spend a little bit more time with persons who I love.

Max: How does a perfect PhD student look like?

The perfect PhD student for me is the one who understands that they need to take one step at the time to become an independent thinker. Gaining a PhD is a long road but a lot of young PhD students want to reach their targets very soon and they consider the way to their target as a straight line. But such straight line usually does not exist in real life. It's much more a winding way with a lot of turns. The person who is going through the PhD step by step with the understanding of this winding way is the perfect PhD student for me.

Questions from Asad

Question: What do you look for in the emails inquiring about a PhD/Post-doc position?

Answer: It depends if I have an open PhD position or not. I don't expect a general email, but rather why do they want to join me at ICIQ and not other places. The most important factor is the interview, I always look for a team-player.

Question: What do you ask in the interview?

Answer: I ask many things *e.g.*, what he/she reads? What he likes? Why ICIQ? etc.

Question: "Chemistry does not go as planned", has it ever happened to you? And what do you make out of the failures?

Answer: If you know very well what's going to happen, then it means you understand the system very well. Probably, it's time to change the topic. The real discontinuity in research is when something unexpected happens. Sometimes, the small spots in TLC develop into interesting projects.

Question: Which of your discovery you liked the most to date?

Answer: The next one.