



"I'VE ALWAYS BEEN CURIOSITY DRIVEN"

AFTER WINNING THIS YEAR'S PRESTIGIOUS EUROPEAN CORROSION MEDAL, ARJAN MOL REFLECTS ON HIS PAST AND THE CORROSION COMMUNITY'S FUTURE

"The future is not ours, it's for the young corrosionists," explains Arjan Mol, Professor of Corrosion Technology and Electrochemistry at Delft University of Technology, Netherlands, after he was awarded this year's European Corrosion Medal.

The prestigious prize is given to one recipient each year in recognition of their achievements in the application of corrosion science. And, following an impressive career that has seen him serve as a professor for 16 years at the oldest and largest Dutch public technical university, Mol has every reason to bask in all he has achieved on a personal level, as well as for the corrosion community. Instead, he's taken it as a gratefully received opportunity to look to what the future holds.

"It is indeed a great honour and humbling at the same time," said Mol of the award, which comes with it a bronze medal, a diploma, and a €1,000 prize. "At the same time I feel it's not a recognition of the work of Arjan Mol, personally. It's really another discreet opportunity to thank the people around me who I have been able to work with over the years. It's a moment to stand still and reflect on what we have done so far and also what challenges and opportunities lie ahead.

"So, it's a moment in time to share the appreciation of the work of the people I've worked alongside. Maybe in several interviews I've mentioned that science is not an individual activity, as it's not worth much if you can't work with people, and that goes for BSc-, MSc-, PhD-students, postdocs, industrial partners, or international academic staff."

Clearly, the award has offered Mol an opportunity to reflect and gauge his achievements, as well as his impact on the wider corrosion community, which includes notable work with the EFC. Having served as Chair of the EFC Working Party - Physico-chemical methods for Corrosion Research, and Chair of the EFC Science and Technology Advisory Committee, Mol has also held the position of EFC Vice-President from 2017 to 2018 and EFC President from 2019 to 2020.

Mol has also been Honorary Professor at the University of Science and

Technology Beijing, China and since 2010, Mol has also been the Dutch Representative Member of the International Corrosion Council ICC. Despite this impressive list of personal achievements, Mol isn't ready to rest on his laurels and bask in his achievements just yet. Instead, it appears that he's just getting started, as the only direction he seems to be facing is towards the future – and most importantly in collaboration with his trusted colleagues, particularly the next generation of corrosionists.

CORROSION CHALLENGES

"The challenges that we are facing in terms of corrosion and corrosion protection are too complex to do by yourself. I cannot do it by myself, so I'm grateful for the things I've been able to do so far," said Mol.

"The people who have given me trust and assurance that I could support and serve the wider corrosion community have been very important, as this has given me the confidence to initiate new ideas within the global corrosion community. At least one of the major highlights is having the Young EFC in place.

"That was an initiative that I shared when I was in a strategic meeting when I was still Chair of the Science and Technology Advisory Committee. I brought up the idea that the future is not ours, it is for the young corrosionists. And we should provide them with pathways to be engaged, because they have fresh, new ideas, which sometimes we have forgotten, but are super important for the youngsters. So I'm super proud of the Young EFC.

"It's something that has shown trust and faith in people, and provided them the opportunity to bring new ideas into the EFC community, which are then self-propelling after the first initiation. So, that in retrospect it fills me with pride, but more pride in the wider corrosion community than in me personally."

This investment in the future is seemingly vital to Mol's outlook. It's an investment in people as much as it is in corrosion science and the European

Corrosion Medal has given him another opportunity to share his forward-facing attitude.

"This honour provides me with a platform to share my thoughts and ideas that I've generated over the years, so I think that the provision of a platform is very helpful," explains Mol.

"I've always been curiosity driven, so I was never satisfied when I had a solution for a corrosion protection problem, but didn't know how it worked. I really like to go beyond knowing how, as I need to also know why things are actually working. I hope those sorts of thoughts, ideas, and drivers will inspire others to take certain pathways to do things that they want to do, but maybe do not dare to do."

FUTURE GENERATIONS

With a focus on future generations, those who enter the industry or academia might be tempted to follow Mol's path, with his specific research focus areas including, local electrochemical analysis of corrosion mechanisms, surface treatment and interfacial bonding of organic coatings on metal (oxide) surfaces, and multi-functional and eco-friendly corrosion inhibitors and the evaluation of active protective coatings. And, thanks to this wealth of expertise and experience, Mol is ready to tackle those challenges that face the corrosion industry and the wider community head on.

"The energy and materials transition is a super important societal challenge that we have ahead of us. We have solar energy, the hydrogen economy, geothermal, and nuclear energy. All these new, renewable energy sources come with corrosion challenges during production, processing, transport, and storage. So, the circular energy demands will be impactful to all of us, as well as our corrosion scientific community," explained Mol.

"There are a few things that I think that can help us, including the fourth paradigm in science. Data based science, big data, and machine learnings will become very important because the complexity of our world is not going to be getting simpler than the available tools that we have to tackle the problem.

"So, to be able to design new materials, to be able to have predictive power for corrosion engineering, and for lifetime predictions could be quite useful. We should not go blindly in that direction though, as we should always be able to rationalise the physical chemistry, and electrochemistry behind all this.

"In terms of new materials design, as well as lifetime prediction and extension of new and existing infrastructures, these are the things that I'd like to focus on. My focus will then be on the experimental input, so reliable data, sufficient data, corrosion monitoring, and sensing are areas that I still want to explore in the near or further future."

In spite of all this applied knowledge though. In spite of all the latest state-of-the-art technological and scientific advances. And in spite of any ability to predict future corrosion trends, Mol has a closely held belief in something far simpler than any applied science - and that's people.

"I have some expertise, which I think is useful for others, but I can learn just as much as others as they can learn from me," said Mol.

"It's very difficult to be an expert in corrosion sensing, as well as in machine learning, so it all comes down to teamwork and collaboration. By ourselves we simply cannot be as effective and impactful, as we are in collaboration."

→ Arjan Mol will be presented with his European Corrosion Medal and certificate at EUROCORR 2022 in Berlin, where he will be invited to give a lecture related to his work.

ARJAN'S ADVICE FOR ASPIRING CORROSIONISTS

→ Enjoy the ride. We are fortunate to do what we want to do, to see things for the first time, that nobody else has ever seen.

→ Don't strive for anything that you aren't sure will come your way. Build your ship and when the wind comes by then try to catch it.

→ Open your eyes to opportunities.

→ Don't just focus on publishing because of your academic career path. Other things are at least equally important, like your collaborative power and taking on responsibility for the research community.



Arjan Mol has worked for the past 16 years at Delft University of Technology, Netherlands (students pictured working in the university's lab, right) where he currently holds the position of Professor of Corrosion Technology and Electrochemistry after joining the organisation as an Assistant Professor