

Meet Martin Sitte, a FEBS Open Bio Poster Prize Winner

Our interviewee is Martin Sitte, a PhD student at Masaryk University, the Czech Republic. Martin received a FEBS Open Bio Best Poster Prize at the FEBS3+ Meeting: XXVIIIth Biochemistry Congress, on 7–10 September 2025, in Prague, Czech Republic.

[*FEBS Junior Section and FEBS Open Bio*](#)

Tell us about your research topic/work. What project(s) are you working on? What is the aim of your study?



On Earth, and especially in the oceans, there is an extraordinary diversity of organisms that can produce light. These organisms rely on a wide range of photoproteins, enzymes, and small molecules to generate light with remarkable efficiency. My research focuses on uncovering molecular principles underlying marine bioluminescence.

I am a synthetic and molecular biologist, and I use structural biology approaches to map the architecture, interactions, and mechanisms of bioluminescent proteins and enzymes at high resolution. The main aim of my work is to understand the core biochemistry of bioluminescence — a trait that has evolved more than 90 times independently throughout the history of life! Despite this impressive evolutionary success, only a small fraction of bioluminescent systems have been characterised to date.

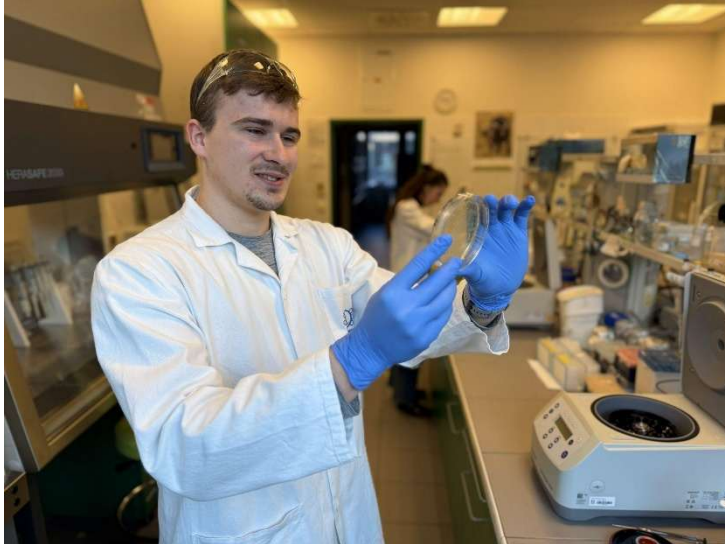
One of my projects explores an exceptionally efficient energy-transfer system found in sea pens. In this system, a light-emitting enzyme forms a complex with a second protein that acts as a light-harvesting antenna. Through resonance energy transfer, this protein complex dramatically enhances light output and quantum yield compared to the enzyme alone.

Another project focuses on calcium-regulated photoproteins that emit light but become inhibited after exposure to light. This represents a fascinating energy-saving strategy in marine organisms, ensuring that light is produced only in darkness and not wasted during daylight.

Ultimately, my long-term vision is to translate these marine bioluminescent systems into nature-inspired, sustainable biotechnological tools—for example, engineering decorative bioluminescent plants that could provide gentle ambient lighting without electricity.

Who or what inspired you to choose a career in science?

It might sound like a cliché, but my journey into science really started with my high school biology teacher. He was fun, genuinely passionate, but most importantly, he knew how to spark curiosity in his students. That ability to encourage questioning and exploration had a lasting impact on me, because curiosity is at the very heart of being a scientist.



Another strong influence on my decision to pursue experimental biology and biotechnology was my best friend's father, Professor Jiří Damborský, the founder of the Loschmidt Laboratories of Protein Engineering at Masaryk University. Seeing science up close — not just as something you read about, but as something you actively do — had a huge impact on me. He also recommended my future PI for my Bachelor's and Master's studies,

Associate Professor Pavel Dvořák, whose enthusiasm for experiments and hands-on approach to sharing his knowledge effectively launched my scientific career and truly sparked my joy in doing science.

Looking back, it wasn't one single moment that decided my path, but rather a series of inspiring people who showed me how powerful and creative science can be. Their influence is a big reason why I enjoy asking questions, designing experiments in the lab, and exploring unusual biological systems to this day.

How does it feel to receive a *FEBS Open Bio* Poster Prize as recognition for your work? How do you see this Prize influencing your career and future plans?

It is a great honour to receive such an award, especially given the strong competition and the many excellent posters presented. I see it as a very encouraging recognition of the work I am doing and of the ideas behind it.

Receiving this award is also highly motivating. It gives me confidence that my research direction is relevant and interesting to the wider scientific community, and it encourages me to keep pushing forward, even when experiments do not always work as planned.

What advice would you give to aspiring students/scientists?

Be passionate about your work and stay curious! Science doesn't always go as planned, and experiments often fail, but maintaining a positive enthusiasm — even when things don't work — makes the difference.

Sometimes, having an inspiring environment and a supportive PI is even more important than the specific topic you are working on. Seek out mentors and colleagues who motivate you and push you forward, ask questions, try new ideas, and enjoy the process. It's the excitement of learning and exploring that makes a career in science truly rewarding.



Where do you envision the future of your career?

My career goal is to pursue a path that bridges academia and industry, allowing me to stay closely involved in research and education while also contributing to the practical, application-driven side of the biotechnology sector. I believe that high-quality education and access to cutting-edge knowledge are essential for achieving technological breakthroughs and successful innovations.

What I find particularly exciting is that, in science, even a simple question can grow into a complex problem that requires collaboration across many people and disciplines to solve. In my own research on marine bioluminescence, I have seen how surprising results can not only be deeply rewarding, but also inspiring — they spark new ideas and help me understand the natural world in ways I never anticipated. This combination of discovery, collaboration, and practical impact is exactly what I hope to carry forward in my future career.

