

A message from the Young Crystallographers' Section

It all begins with a crystal. An arrangement invisible to the naked eye, of exquisite precision, where every atom occupies a precise place. It is this hidden beauty, this silent rigour, that guided us all to the labs, in front of the diffractometers, microscopes, and other impressive instruments, to search within matter for what the eye alone cannot perceive.

Today, the Young Crystallographers' Section of the French Crystallographic Association is speaking out. For the first time, *Maille* is born; a newsletter intended to be a living reflection of our community and the questions, ambitions, innovations, and faces of those within. In this first issue, we introduce the new board of the Young Crystallographers' Section and the programme that awaits us this year. We shine light on three young researchers, recipients of the 2026 AFC Thesis Prize, whose work illustrates the richness and diversity of our discipline. And because a community is also built through informal gatherings, we are promoting the concept of Café Solutions, small virtual gatherings where we tackle the daily challenges of crystallography together over a cup of coffee.

But this first issue also poses a big question, one that is simple, yet profound: Are you a crystallographer? We decided to ask some senior researchers — experienced, dedicated, passionate — their thoughts on the matter. Their answers may surprise you, make you think, and perhaps even make you smile. More importantly though, we hope they will inspire you to find your own answer to this question, one you can proudly share with the community through us, because *Maille* is also your voice.

Crystallographically yours,

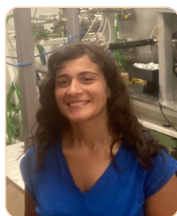
The J-AFC

What's New: The old board presents the new

This year, the board of the AFC's Young Crystallographers' Section has been given a brand new look with the election of highly motivated young crystallographers who recently joined the section. As PhD students, postdoctoral researchers, and engineers, from the fields of chemistry, physics, and biology, they are ready to promote crystallography and the AFC among young scientists.

It is with great pleasure that we introduce **Narimane Meziani**, a post-doctoral researcher at the Institute of Molecular Chemistry and Materials (Orsay), and **Romain Vincent**, a PhD student at the Institute of Molecular and Cellular Biology (Strasbourg) and the Institute of Nanostructure and Solid State Physics (Hamburg), who will serve as the **co-chairs** of the board. **Lee Cameron**, a post-doctoral researcher at the Institute of Chemical Sciences (Rennes), and **Laureen Busson**, a post-doctoral researcher at the Laboratory of Molecular Chemistry (Palaiseau), were elected as secretary and treasurer, respectively. Two communication managers complete the executive committee: **Leon Djefry Nguema Obiang**, a PhD student at the Laboratory of Crystallography, Magnetic Resonance and Modelling (Nancy), and **Jérémy Forté**, an engineer at the Parisian Institute of Molecular Chemistry.

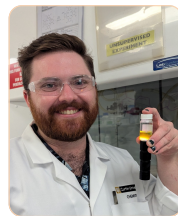
We would also like to thank **Nazanin Kordestani**, a post-doctoral researcher at the Institute of Condensed Matter in Chemistry (Bordeaux), and **Pierre Gauffre**, a post-doctoral researcher at the Paul Scheerer Institute (Villigen), who have been running — and will continue to run — Café Solutions, our online forum for discussing our crystallographic challenges.



Narimane Meziani
Co-Chair



Romain Vincent
Co-Chair



Lee Cameron
Secretary



Laureen Busson
Treasurer



Leon Djefry Nguema Obiang
Communication Manager



Jérémy Forté
Communication Manager



Nazanin Kordestani
Café Solutions Manager



Pierre Gauffre
Café Solutions Manager

It is through a wonderful synergy that this new committee has brought to life the newsletter project initiated by us, the previous board, and we would like to thank them warmly.

Elen Duverger-Nédellec & Marie Dallon
Co-Chairs (2023-2025)

Community Spotlight: Winners of the 2026 AFC Thesis Award

Keeping in theme with our goal of promoting young crystallographers, we want to highlight up and coming researchers and the wonderful work they do within the field of crystallography. In this first edition, we present the winners of the 2026 AFC Thesis Prize, a biennial prize awarded by the AFC in recognition of outstanding doctoral work. We reached out to ask the winners about their academic journey, thesis topic, and future plans, before asking if they had any advice for young crystallographers. To learn more about their work, please follow the [link](#) to the AFC webpage where each candidate discusses their research in greater detail.

Academic Background: I completed my Master's degree (my engineering degree, strictly speaking) at AgroParisTech, followed by my PhD at the ESRF in Grenoble and the University of Hamburg, supervised by Antoine Royant (Institute of Structural Biology) and Arwen Pearson (University of Hamburg). I am currently a postdoctoral researcher at the National Taiwan University in Taipei and the Institute of Structural Biology in Grenoble.

Thesis Topic: The aim of my PhD was to make time-resolved serial crystallography of proteins more accessible: the most significant breakthroughs in this field have utilised X-FELs, free-electron lasers producing short X-ray pulses, but these instruments are difficult to access. I therefore developed tools enabling time-resolved crystallography experiments to be carried out at synchrotrons, which are far more accessible to biologists. I have also developed tools for the analysis of time-resolved data (containing mixtures of transient intermediates), analogous to Principal Component Analysis, or using complementary in crystal/in situ spectroscopy techniques.

Career Plans: I would like to continue in academic research, and will likely apply for positions at the CNRS and other institutes from next year onwards.



Nicolas Caramello

2026 Winner of the Biology Section

My advice

My advice would be to stay curious, and not to hesitate to work on several projects at once if you feel like it: the most significant findings in my thesis came from projects that were (initially) secondary!



Sabrina Grenda

2026 Winner of the Chemistry Section

Academic Background: After completing a Master's degree in inorganic chemistry at the Université Claude Bernard Lyon 1, I undertook my PhD at the Laboratory of Multimaterials and Interfaces (LMI) under the joint supervision of Professors Dominique Luneau and Bérandère Toury. I then completed my first postdoctoral fellowship in South Korea, at the Institute for Basic Science (Sungkyunkwan University), between November 2024 and January 2026, focusing on the synthesis of new precursors for the production of 2D materials (graphene and nanographene) doped with boron and nitrogen atoms. Since February 2026, I have been continuing my research at the LMI with a second postdoctoral fellowship dedicated to the synthesis of new diamane structures (2D diamond structures) composed exclusively of boron and nitrogen atoms.

Thesis Topic: My PhD research focused on the synthesis and study of the magnetic properties of a borazine functionalised with nitroxide radicals, in order to investigate the effect of the borazine core on the delocalisation of unpaired electrons. Using a multidisciplinary approach combining organic and inorganic chemistry, physical chemistry (magnetometry and EPR spectroscopy), and crystallography (single crystal X-ray diffraction and neutron diffraction), this work highlighted in particular the influence of crystalline polymorphism on magnetic behaviour in the solid state.

Career Plans: I wish to pursue an academic career, through a position as a CNRS research fellow or senior lecturer, in order to develop projects centred on the design, synthesis, and characterisation of functional organic or organometallic materials and nanomaterials, for applications in the field of molecular-based magnetism and optoelectronics.

My advice

I would advise young PhD students and researchers not to hesitate to step outside their comfort zone if they wish to collaborate in order to develop new skills or expand their scientific network. It is important to take advantage of the opportunities for collaboration and mobility offered through recommendations from supervisors, as well as through the support provided by universities, associations, and international financing organisations.

Academic Background: After attending an engineering school, I returned to Paris-Saclay University to study for a Master's in Nanosciences (the ancestor of the Master's QLMN) specialising in Nanophysics, which I completed with an internship at the Laboratory of Solid State Physics in Orsay, where I went on to pursue my PhD. During these three years of doctoral study, I focused on the impact of anisotropic mechanical stresses on two-dimensional materials exhibiting unique electronic properties. The interest I developed in these properties led me to continue studying them using spectroscopy at the Néel Institute, where I am currently a postdoctoral researcher.

Thesis Topic: My PhD research focused on the development of an experimental device capable of applying anisotropic mechanical stresses to low-dimensional materials exhibiting charge density wave (CDW) electronic instabilities. In the quasi-2D compound TbTe_3 , it's use demonstrated that it was possible to reverse the ratio of the planar lattice parameters ($a/c < 1 \rightarrow a/c > 1$) and that this reversal was accompanied by an orientational transition of the ODC ($\text{ODCc} \rightarrow \text{ODCa}$). This device also revealed strong correlations between certain lattice parameters and the critical temperatures of the two ODCs present in the quasi-1D compound NbSe_3 .

Career Plans: Upon completion of my postdoctoral contract, I plan to apply for CNRS research posts or lecturer-researcher positions to continue my research and be able to invest myself in higher education.



Antoine Gallo-Frantz

2026 Winner of the Physics Section

My advice

To young researchers and PhD students in crystallography: try to surround yourselves with people for whom the sight of an umpteenth Bragg peak or Debye ring still evokes the same sense of amazement. It's refreshing and motivating, especially during long synchrotron experiments.

Interview: Are you a crystallographer?

« Are you a crystallographer? » A deceptively simple question with no definitive answer. We asked two senior researchers their thoughts on the matter, drawing upon their personal experience garnered over many years.



Claude Lecomte

Emeritus Professor of Physics and Crystallography. Founder and former director of the CRM2 Laboratory — Crystallography, Magnetic Resonance and Modelling (University of Lorraine & CRNS). Former director of the Jean Barriol Institute.

What led you to work in the field of crystallography?

The possibility of ‘seeing and modelling’ bonding electrons was my initial motivation for crystallography, in connection with quantum mechanics — I was fortunate to have P. Becker and P. Coppens as my mentors. The study of symmetry and, at that time, the possibility of writing or modifying computer programs were also decisive factors; the mathematical side of crystallography has always interested me.

Do you consider yourself a crystallographer? Which life experience gave you this feeling?

Yes, I consider myself a crystallographer first and foremost, before being a physicist or a physical chemist. At the start of my career, the crystallographer was regarded — if I may say so — as a physicist for chemists and a chemist for physicists; the latter often did not regard us as their equals, and many chemists reduced us to nothing more than structural technicians. For example, I have always fought against positions of ‘crystallography technician’ in chemistry, when this work was actually that of an engineer or a PhD holder. Hence my determination to identify as a crystallographer whilst remaining a physicist throughout my career, including within the official bodies of the CNU and the CNRS: I am a former member of the National Committee in Section 5 (now Section 7) of the CNRS and of the Physics Department of the AERES. It is essential to have crystallographer representatives in all our university bodies. Crystallography transcends disciplinary boundaries: throughout my career, I have worked in physical crystallography (phase transitions, HS–LS metastable states, methodology, detectors), chemical crystallography (modelling the electron density of chemical bonds and their electrostatic potential, hydrogen bonds, rare earth elements — notably in the PhD theses of M. Souhassou, N. Ghermani, V. Pichon-Pesme, F. Porcher, E. Aubert, E. Espinosa, and N. Claiser), and biological crystallography (multipole databases, electron density in proteins and large lattices, contribution to the MoPro programme). Being a crystallographer is of fundamental importance to scientific culture, as one learns to engage with physicists, chemists, mineralogists, and biologists. My recognition as a crystallographer also stems from my roles as President of the AFC and the ECA, Vice-President of the IUCr, and Chairman of ECM19.

What would you say to a PhD student or early-career researcher who is unsure about defining themselves as a crystallographer? In your opinion, at what point can someone define themselves as a crystallographer?

A PhD student who identifies as a crystallographer must understand crystallography — space groups, lattices — as well as X-ray and neutron diffraction. This may seem obvious, but it means that a crystallographer is not merely a user of crystallographic ‘black boxes’ that deliver a view of the structure and a CIF file. At the very least, they must be interested in packing and interactions within the unit cell, be able to solve a disorder problem, analyse their refinements in statistical terms... and above all be proud to be a crystallographer. They must also understand how diffractometers work and, if possible, contribute to the development of this science — our own. In short, be capable of teaching crystallography and diffraction at a Master’s level.



Anna Krawczuk

Professor at the Georg-August-Universität Göttingen, Institute of Inorganic Chemistry (Göttingen, Germany).

What led you to work in the field of crystallography?

What first drew me toward crystallography was probably a fascination with minerals and gemstones. Even as a child, I was amazed by how nature can produce such perfectly ordered and beautiful shapes, and how symmetry influences not only crystal morphology, but also properties such as color, optical effects, and overall appearance.

I also grew up near a sulfur mine where many members of my family worked. Thanks to that, I had the opportunity to see minerals being brought out directly from the mine, which made the whole world of crystals feel very real and tangible to me from an early age. I think that experience naturally sparked my curiosity about how such structures form and why they look and behave the way they do. Later, crystallography became especially attractive to me because it combines beauty with deep scientific insight. It allows us to connect atomic-level structure with the physical and chemical properties of materials, which I still find fascinating today.

Do you consider yourself a crystallographer? Which life experience gave you this feeling?

Yes, I consider myself a crystallographer. I think the moment that truly gave me this feeling was when I began to understand how fundamentally important structure is for understanding the physical properties of solids. Without structural knowledge, trying to explain or design material properties often feels like walking blind. Crystallography provides the connection between the atomic arrangement and the macroscopic behavior of a material, and that realization had a huge impact on me scientifically. Over time, I also became increasingly fascinated by how symmetry and intermolecular organization translate into observable effects, for example optical, electronic, or mechanical properties. The more I learned, the more I realized that crystallography is not only about determining structures, but about understanding why materials behave the way they do. That perspective is what really made me feel that this is my field.

What would you say to a PhD student or early-career researcher who is unsure about defining themselves as a crystallographer? In your opinion, at what point can someone define themselves as a crystallographer?

I would say that people should not feel pressured to immediately define themselves by a specific label, especially in a field like crystallography, which naturally connects many disciplines such as chemistry, physics, materials science, and even biology. Many researchers work at the interface of fields, and that is actually one of the strengths of crystallography. In my opinion, becoming a crystallographer is not about reaching one specific milestone or suddenly “earning” the title. It is more of a gradual process. If understanding crystal structures and how they influence material properties genuinely fascinates someone, if it drives them to keep learning and asking questions, then I think they are already on that path. Over time, with experience, that scientific identity develops naturally. I think the most important thing is not to focus too much on labels, but to follow the research direction that feels meaningful and exciting. The definition often comes later on its own.

What do you think about Claude and Anna's answers? Do you agree or disagree with how they define a crystallographer? If you'd like to share your thoughts on Claude or Anna's answers or even provide your own answers, please reach out via email or on Framateam using the links at the end of this newsletter!

Recommended Reading: a publication for everyone

We all know how painful it can be trawling through literature to find an article on a specific concept, so we thought we would help a little by asking an experienced crystallographer to recommend an important publication that will improve your crystallographic knowledge.

For this first issue, **Sébastien Pillet**, a CNRS research director at the CRM2 laboratory — where he leads the CRISP team (Crystallography and Structure-Property Relationships) — shares an article on structure refinement written and reported by David Watkin in 2008.

Structure refinement: some background theory and practical strategies

David Watkin — Journal of Applied Crystallography (2008).

David Watkin's article can be regarded as a major educational reference in the X-ray crystallography of small molecules and in structural chemistry. It explains the theory of crystal structure refinement in a practical, non-mathematical way, and helps crystallographers to better understand what refinement programs actually do. It offers clear and highly useful strategic advice, and teaches us how to think correctly about refinement. This article deserves careful study and can be regarded as a true classic textbook.



Sébastien Pillet

CRM2, University of Lorraine, Nancy

● [Access the publication here.](#)

Café Solutions

The last Café Solutions took place on May 27th and we were fortunate to have **Elizabeth Hillard** from the ICMCB as our guest expert. Elizabeth spoke about chirality in crystals, covering topics such as: what is a chiral molecule? how does this phenomenon manifest in crystals? and what impact does it have on structural resolution? This event brought together crystallographers from all disciplines demonstrating the universal nature of this topic. We thank Elizabeth for accepting our invitation and contributing her knowledge and expertise.

Do you have a topic you'd like us to cover in Café Solutions? or are you an expert crystallographer that enjoys sharing your knowledge with younger generations? Please contact us! We love to receive suggestions for future Café Solutions topics so that we can help the community where it is needed in a friendly and supportive environment!

Notable Dates & Useful Links

Join the community of young crystallographers! Sign up to the mailing list to stay abreast of upcoming events and recent news in the crystallographic space. Alternatively, contact us via email or by joining Framateam — our online community — to suggest ideas for future content, ask for crystallographic help, or meet other young passionate crystallographers.

Upcoming Dates

- **30/6/26 - 3/7/26** — The 2026 AFC Congress. *Don't forget to register!*

Important Links

- **Our website** — News from the J-AFC and subscription to the mailing list.
- **Contact us** — Have an idea, a question, or a Café Solutions topic to suggest? section.jeunes.afc@gmail.com
- **Framateam — the online community** — Propose ideas or discuss recent topics for Café Solutions, share your thoughts on Claude and Anna's interviews, ask for technical assistance, or chat with other young crystallographers.
- **The 2026 AFC Thesis Prize Winners** — Further details on the award-winning research projects.
- **Job vacancies & events** — Crystallography roles and events in France and Europe as listed on the AFC website.