Panel report
Topical Review - Chemistry and Structural Biology 2026

Chair: Prof. Rainer Haag (Freie Universität Berlin)
Prof. Bettina Lotsch (Max Planck Institute for Solid State Research, Stuttgart)
Prof. James Naismith (University of Oxford)
Prof. Helen Saibil (Birkbeck University of London)
Prof. Peter Fratzl (Max Planck Institute of Colloids and Interfaces, Potsdam)

March 8, 2026

1 Part 1 - Executive Summary

The panel conducted a review of the Institute of Science and Technology Austria (ISTA), focusing on Chemistry and Structural Biology. The evaluation highlighted the exceptional quality of research and facilities at ISTA, with researchers at all levels—PIs, postdocs, and PhD students—expressing enthusiasm for working there. The scientific support units (SSUs) were particularly praised for their organization and management, though some areas, such as cryo-TEM and scientific IT services, were noted as understaffed.

The panel commended the diverse group of evaluated PIs, spanning both chemistry and structural biology. While structural biology has reached critical mass, chemistry still requires growth, particularly with the addition of a senior faculty to improve mentoring and guidance for junior faculty. The tenure process was identified as challenging for some faculty due to limited senior mentorship and the significant time invested in setting up laboratory infrastructure and SSUs. Individual evaluations noted the strengths and weaknesses of the professors, as detailed below.

The panel recommended that ISTA considers a strategic hiring process to scale up the area of Chemistry and rebalance activities among the SSUs as the institute matures. They also emphasized the importance of clarifying the role of community service in tenure decisions and ensuring that early career faculty receive adequate mentorship. Overall, the panel was impressed by ISTA's collaborative atmosphere, well-funded research, and the asset of its scientific support units.

2 Part 2 - General Section

2.1 General Remarks

For some panel members this was their first visit to ISTA and all members were uniformly impressed by the exceptional quality of research and facilities at ISTA. The panel commended the seriousness with which the process was conducted; the presentations by faculty were engaging and well prepared. We are very grateful to faculty (both evaluated and newly hired), post-docs and students for the time they spent explaining their work and ambitions. We wish to thank the President, Martin Hetzer for sharing his plans, answering our questions and listening to our observations. We are grateful to his senior colleagues Sandra Siegert (Life Science Chair) and Mikhail Lemeshko (Physical Science Chair), the respective area chairs, for accompanying the review process. The panel wishes to particularly thank Helga Materna, Amineh Adelnia and Eva-Maria Plessl for the superb support and generous hospitality throughout the visit.

Researchers at all levels, PIs, Postdocs and PhD-students, seem generally enthusiastic to work at ISTA. The atmosphere is collaborative, research is well funded and the scientific support units are a real asset. The group of evaluated PIs was quite diverse, spanning chemistry and structural biology. While structural biology has just reached critical mass at ISTA, chemistry still needs to grow. In particular,

at least one additional senior scientist would be very welcome in this field to improve mentoring and guidance for the relatively young faculty in this area.

While on-boarding has generally been perceived as smooth, the tenure process has been rough for some of the faculty in this area because of several factors: There were very few–if any–senior faculty available for mentoring; junior faculty has been investing large amounts of effort and time to set up laboratory infrastructure and SSUs, for example in cryo-electron microscopy, NMR, and the laboratory support facility. It is important to clarify the importance of community service, such as setting up an SSU or engaging in the graduate school, for future tenure decisions. Without this, time invested in ISTA community service could be seen as wasted.

The creation of XISTA was welcomed as an exciting opportunity for ISTA to translate its scientific research output into concrete societal and technological benefits.

2.2 Students

The PhD Students were extremely positive about their situation. Students were aware of mental health support and had an assigned mentor from the other stream for their first year. However, students were unsure who to approach where difficulties were encountered in the supervisor student relationship beyond first year. They felt the mentor was often too distant from the science to help in such matters. Difficulties in such relationships have become more common in the post COVID generation and more formal pastoral structure should be considered. In addition, an average PhD duration of five to more than six years is considered excessive, and a duration of four years is recommended. The lab rotation is a real asset and generates close collaborations between the faculty.

2.3 Postdocs

The postdocs were very proud of being at ISTA and especially like the SSUs. They are well-connected between each other and also see the yearly retreat as an important event. However, information on the entrepreneurial training and funding possibilities at XISTA could be more focused and we recommend that the PIs should generate more awareness. More internal role models may help.

2.4 Scientific Service Units - SSUs

The SSUs are certainly a highlight at ISTA and are extremely well organized and managed. The user group is a good system. The faculty, however, would like some more transparency when new hires are planned or made, and they especially would like to see more scientists in the unit management. The Scientific Support Units were praised by all who had come from other institutions. These are a jewel in the crown of ISTA in the sense of empowering researchers to deliver the highest quality science with cutting edge technology. The cryo-TEM (especially regarding the EM structure analysis unit) and IT user services seem to be understaffed. Also, for image processing there should be a queuing system installed, so that the system cannot be monopolised by individual users.

2.5 The Future - New Hires

Whilst excellence must remain the defining characteristic of the hiring process, it is time for ISTA to decide whether a hiring strategy should be formulated for ISTA to fully realise its promise. Much of the most impactful science comes at the interfaces of traditional disciplines and requires expertise beyond any one lab. An approach that does not seek to create synergies by hiring to connect activities could miss exciting opportunities. The panel noted that Theoretical Chemistry, sustainable materials chemistry; RNA therapies, engineered living materials and AI-enabled automation were not represented in the faculty but could interface widely with faculty.

2.6 Final thoughts

There was universal praise from students, and especially from post-docs who had arrived from other laboratories for the scientific support units (SSU). In the rapid growth phase every SSU is essential, but as ISTA matures, rebalancing activities and efforts (including staffing) amongst the SSUs will be required. Some thought should be given to how the SSUs can be reviewed in a more systematic

manner (akin to the thematic review for faculty) that involves internal researchers (faculty, post-docs and students) and external comparators.

As the size of ISTA increases, processes which could be left to more informal understandings may need to be regularised. Equally as its reputation grows, ISTA should aspire to continue to increase its ambitions for hiring and tenure. Communicating more clearly with more formal processes to tenure candidates will be important. For example, expectations around the value attached to service and entrepreneurship need to be established. We found strong evidence for peer mentorship but a perceived lack of senior mentorship (reflecting in part the youth of ISTA). We agree that external expert reviews are at the heart of rigorous tenure processes, providing a balanced outside-view of the candidate by the wider community. However, such reviews are not a substitute for internal judgement and evaluation.

The scaling up in Chemistry is urgently needed to reach critical mass in the view of the new building. A bottom-up process should be installed to organize a strategic hiring process for 5-7 positions over the next 2-3 years. In addition to junior faculty positions there should be at least one senior position in the field.