

Report from the 7th Alpine Conference on Solid-State NMR

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The Alpine Conferences on Solid-State NMR are held biennially in Chamonix-Mont-Blanc, an idyllic commune in the Rhône-Alpes region of France. With around 250 scientists attending 30 talks as well as 130 posters it makes for an intense but focused four days. The small size of the conference is probably its greatest strength: there are no parallel sessions so all attendees are afforded a full overview of Solid-State NMR's wide-ranging applications. For the experienced NMR spectroscopist it is an excellent chance to discuss current challenges and seek new collaborations; for aspiring post-docs such as myself it offers a fantastic opportunity to see new and related fields of research, as well as to meet possible future employers and their groups.

The intended highlight of the conference was probably the guest lecture held by the Norwegian physical chemist Thomas Ebbesen entitled "Light, Metal and Molecules" which gave fascinating insight into the discovery, nature and use of surface plasmons. To my mind, however, the talk with the most lively discussion was actually held by Meghan E. Halse, a student from the Emsley group in Lyon. Her research simulating spin diffusion using reduced Liouville spaces promises to reduce the complexity of NMR calculations on large spin systems to the point where it may become possible to simulate the entire proton bath of small proteins.

Naturally there were many other fascinating talks. For instance, Dimitrios Sakellariou told us of his prototype spectrometer which performs MAS by spinning the magnet rather than the samples, Enrico Ravera presented his work on inducing sedimentation during the experiment through ultra-fast MAS, and Philip Grandinetti gave us an inspiring introduction to the world of symmetry pathways.

But the conference wasn't just full of curiosities; much of it was of practical value to my current research. Robert Tycko's presentation brought the MCASSIGN2 algorithm to my attention which may be of use with an old project of mine involving flufenamic acid. A chance encounter with Jie Shu from the Max Planck institute also provided some interesting material on quantification of CP spectra which may come in handy. With regards to my current work, the most important event hands down was a brief conversation with Arno Kentgens, who coauthored the original paper that our work is based on, and Sharon Ashbrook provided much useful insight into the costs and effectiveness of performing in-house ¹⁷O enrichment. The presentations also provided some very interesting information regarding RF inhomogeneity in R-sequences which may prove very useful for the interpretation and future implementations of the experiments performed at the UK 850 facility.

And finally, we must not forget the purpose of my attending the conference: presenting the results of our ¹⁷O recoupling experiments at the UK 850 MHz facility. There was never a dull moment in the one and a half hour long poster presentation session. Most of the visitors came specifically to see the poster, so the resulting discussions were naturally long and in-depth. It is worth noting that there was interest from over-sees groups in Canada, Japan and Israel. Over all, I feel that the poster was well received and reflected well on the UK 850 MHz Solid-State NMR Facility. I would like to thank the UK 850 MHz Solid-State NMR committee, as well as Bruker, for giving me the opportunity to attend this conference.