



RULES FOR SOLID STATE NUCLEAR MAGNETIC RESONANCE FACILITY AT ICMM-CSIC

In order to request solid state NMR analyses at ICMM-CSIC facility, it is necessary to be previously registered as main or authorised user at LIMS platform on ICMM-CSIC website.

1. Samples

1.1. Sample information

All the information dealing with potential or known risks for health associated to the samples, as well as the information dealing with special storage and sample manipulation must be provided. This information will appear as *compulsory information* in the analysis request form. Along with sample information, the experiments to be run must be detailed (nuclei to be analysed for each sample). It is recommended to include all the relevant information and specific acquisition parameters (if known). The composition (main atoms) of the samples must be likewise provided.

1.2. Sample requirements

To avoid sample damaging or loss, it is recommended to provide samples properly labelled and protected. The selected Id code of each sample (which must match with the one in the analysis request form), must appear clear, visible and indelible on the sample container.

Samples must be provided preferably grinded. If necessary, further grinding will be carried out by the NMR facility staff unless opposite specifications are detailed.

The optimum amount of sample to run MAS NMR experiments is as follows:

- 7 mm. rotors: 200-400 mg.
- 4 mm. rotors: 100-200 mg.
- 2.5 mm. rotors: 30-50 mg.

As a general rule, samples must be dry. This requirement is of special relevance when running high temperature experiments. Experiments at temperatures over 80 °C won't be run unless this requirement is fulfilled.

In case of not being able to fulfill any of the requirements above mentioned, please contact the NMR facility team in order to study the experiment viability.

The existence (or suspicion) of nanoparticles in the sample must be communicated in the analysis request form in order to take the proper safety measures. The presence of volatile compounds in the sample must be likewise indicated.

The concentration of ferromagnetic and/or paramagnetic species CAN NOT be over 5% by weight. If present, it is *mandatory* to indicate its nature and approximate concentration. The user will be responsible for the damages caused to the spectrometer by ferromagnetic and/or paramagnetic impurities which are not reflected in the request form.

Attending to the sample toxicity and/or composition, the Solid State NMR facility reserves the right to decline the request of analysis.

1.3. Sample delivery

Samples can be delivered (by post or in person) to ICMM Solid State NMR facility located in lab S 53. In both cases, the correspondence between sample and request form must be clearly indicated.

NMR facility

Instituto de Ciencias de Materiales de Madrid
C/ Sor Juana Inés de la Cruz nº 3
28049 Madrid

1.4. Sample return

As far as possible, samples will be returned in its original container. If part of the sample is subjected to any kind of manipulation (i.e. further grinding), that fraction will be stored separately in a different container with the same Id code. Both containers will be returned together.

Once the experiments are concluded, users must collect their samples. Solid State NMR facility reserves the right to dispose unclaimed samples within three months after the delivery of the results. In this case, waste management could be charged to the user.

2. *Analisis request form*

In order to request analyses to the Solid State NMR facility it is essential to fill the corresponding form out. The request form will be sent online through ICMM LIMS application.

Users must let the Solid State NMR facility staff know about unstable samples at room temperature and under atmospheric conditions in order to properly store and manipulate

those samples. Moreover, information dealing with toxicity or dangers associated with the delivered samples must be always indicated in order to take the relevant safety measures.

3. Analysis fulfilment

During manipulation, all the necessary measures to avoid sample contamination will be taken. If samples require special treatments before the analysis, the collaboration of the user may be requested. In case of presumably erroneous analysis, a second experiment will be run without additional charge.

3.1. Estimated time

Analyses will be run in order of arrival though this order may be varied in order to optimize the spectrometer operation (short/long experiments schedule, current operating probe etc...).

Under customer request, solid state NMR facility will estimate the necessary time in order to fulfil the requested experiments. That estimated time can be affected by incidents and failures.

3.2. Incidents and failures

Serious incidents and/or failures hindering the regular performance of the spectrometer will be notified on ICMM LIMS platform. If possible, the affected equipment and the prediction for back to normal operation will be indicated in this notification.

4. Results delivery

Results will be uploaded to ICMM LIMS platform. It can be chosen whether to obtain processed or not processed results. For processed results, it is possible to obtain pdf figures and/or ASCII data file. Data will be store for 3 years maximum.

The interpretation of the results fall to the users, nevertheless, advice in the interpretation of the results will be offered under request.

It is also possible to get a detailed report under request. It will be charged attending to its complexity.

5. Invoicing

Invoicing will be done under the valid rates at the moment of receiving the samples. Rates may be annually updated and will be published on the NMR facility website.

6. Acknowledgements

The acknowledgement to ICMM Solid State NMR facility in case of publishing the results obtained through this service in research papers, doctoral thesis and/or congress communications will be appreciated.

The notification of these publications by the users will be strongly appreciated since it will allow the survey of scientific contribution of this Solid State NMR facility. This will leave proof of the spectrometer operation and will support future investments.

7. Sugestions, doubts and complaints

Any doubt, suggestion or complaint can be submitted through the website or by email. Users will be also assisted by phone. Users will be annually requested to fill a customer satisfaction survey.

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