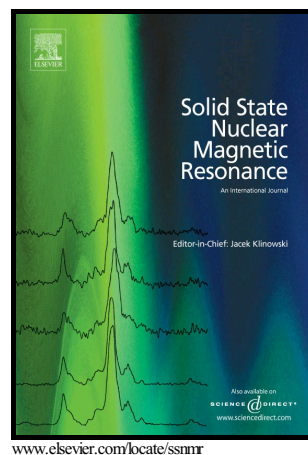


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 ^{23}Na - ^{27}Al in rotating solids

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Heteronuclear correlation experiments of ^{23}Na - ^{27}Al in rotating solids[☆]

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Abstract:

We demonstrated that the heteronuclear correlation experiments between two quadrupolar nuclei, ^{23}Na and ^{27}Al , with close Larmor frequencies can be achieved via *D*-HMQC and *D*-RINEPT approaches by using a diplexer connected to a conventional probe in magic-angle-spinning solid-state NMR. Low-power heteronuclear dipolar recoupling schemes can be applied on ^{23}Na or ^{27}Al to establish polarization transfers between the central transitions of ^{23}Na and ^{27}Al for a model compound, NaAlO_2 . Further, we showed a practical implementation of the two dimensional ^{23}Na - ^{27}Al dipolar-based heteronuclear correlation experiment on a heterogeneous catalyst, $\text{Na}_2\text{CO}_3/\gamma\text{-Al}_2\text{O}_3$. This allows to determine spatial proximities between different ^{23}Na and ^{27}Al sites, thus the surface Na species adjacent to octahedral-coordination Al can be clearly discriminated.

[☆] Dedicated to Professor Jean-Paul Amoureux on the occasion of his 70th birthday

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