



Review

NMR spectroscopy applied to amine–CO₂–H₂O systems relevant for post-combustion CO₂ capture: A reviewCristina Perinu^a, Bjørnar Arstad^b, Klaus-Joachim Jens^{a,*}^a Faculty of Technology, Telemark University College, Kjølnes Ring 56, 3901 Porsgrunn, Norway^b SINTEF Materials and Chemistry, Forskningsveien 1, 0314 Oslo, Norway

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ABSTRACT

Nuclear Magnetic Resonance (NMR) spectroscopy is a powerful non-invasive analytical technique for chemical analyses since direct measurements at a molecular level can be performed. In this work, a survey of NMR spectroscopy applied for studies of CO₂ absorption in aqueous amine solvents (amine–CO₂–H₂O) relevant for post-combustion CO₂ capture is presented. Technical aspects of NMR experiments and the main applications with corresponding results are provided. The overview of the NMR literature in this field suggests that studies of amine–CO₂–H₂O systems can benefit from a further consideration of this spectroscopic technique.

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Contents

1. Introduction	231
1.1. Background	231
1.2. Outline	232
2. Overview of amine–CO ₂ –H ₂ O system chemistry	232
3. Experimental NMR methods	232
3.1. NMR Experiments	232
3.2. Quantitative measurements: parameters and error analysis	233
3.3. Deuterated and reference solvents	235
3.4. Quantification of fast-exchanging proton species	235
3.5. Variable temperature and high pressure NMR experiments	236
4. Results and applications	236
4.1. Speciation of amine–CO ₂ –H ₂ O systems in absorption experiments	236
4.2. Speciation of blended amine–CO ₂ –H ₂ O systems in absorption experiments	237
4.3. Speciation of single and blended amines–CO ₂ –H ₂ O systems in absorption-desorption experiments	238
4.4. Determination of carbamate stability constants	238
4.5. Kinetic studies	239
5. Conclusions	239
Acknowledgements	242
Appendix A	242
References	242

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