

Poster Presentation

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Gas hydrates at high pressure

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The behaviour of gas hydrates at high pressure is of wide interest and importance. Gas hydrates are stabilised by water-gas repulsive interactions. Information on the effect of changing density on these water-gas interactions provides fundamental insight into the nature of the water potential. Gas hydrates are also widely found in nature and systems like the ammonia-water and methane-water systems form the basis of 'mineralogy' of planetary bodies like Saturn's moon Titan. Finally, gas hydrates offer the possibility of cheap environmentally inert transportation and storage for gases like carbon dioxide and hydrogen. We have been carrying out investigations of a range of gas hydrates at high pressure using neutron and x-ray diffraction as well as other techniques. Results from these studies including; the phase diagram of the ammonia water system, the occupancies of hexagonal clathrate structures, and new structures in the carbon dioxide water system, will be presented.

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