

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Time resolved in-situ crystalline structure evaluation of methane clathrate using X-ray diffraction NARAYAN C. DAS, Indiana University Cyclotron Facility, 2401 Milo B Sampson Ln, Bloomington, IN 47408, PAUL RUMBACH, PAUL E. SOKOL, Department of Physics, Indiana University, Bloomington, IN 47405, HUMBERTO CARVAJAL-ORTIZ, LISA M. PRATT, Department of Geological Sciences, Indiana University, Bloomington, IN 47405 — Methane clathrate or methane hydrate is seen as potential source of greenhouse gas as alternative clean energy as well as possible agents of global climate change, their study continues to be a very active topic of research for the future economy. A current challenge in gas hydrate involves the evaluation of hydrate crystal and pore structure that are revealing guides to the physics and chemistry of hydrate growth as well as to the effect of environmental conditions or handling procedures. This work examines time resolved in-situ crystalline structure development of methane hydrate at different pressure and temperature in control water-methane systems by X-ray diffraction technique. We have developed high pressure cell in conjugation with X-ray diffraction instruments allowing in situ and real-time examination of structure and growth of methane clathrate.

Narayan C. Das
Indiana University Cyclotron Facility,
2401 Milo B Sampson Ln, Bloomington, IN 47408

Date submitted: 30 Nov 2009

Electronic form version 1.4