Poster Presentation

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Short to long range order:Phase transition of one liquid crystal molecule at HP

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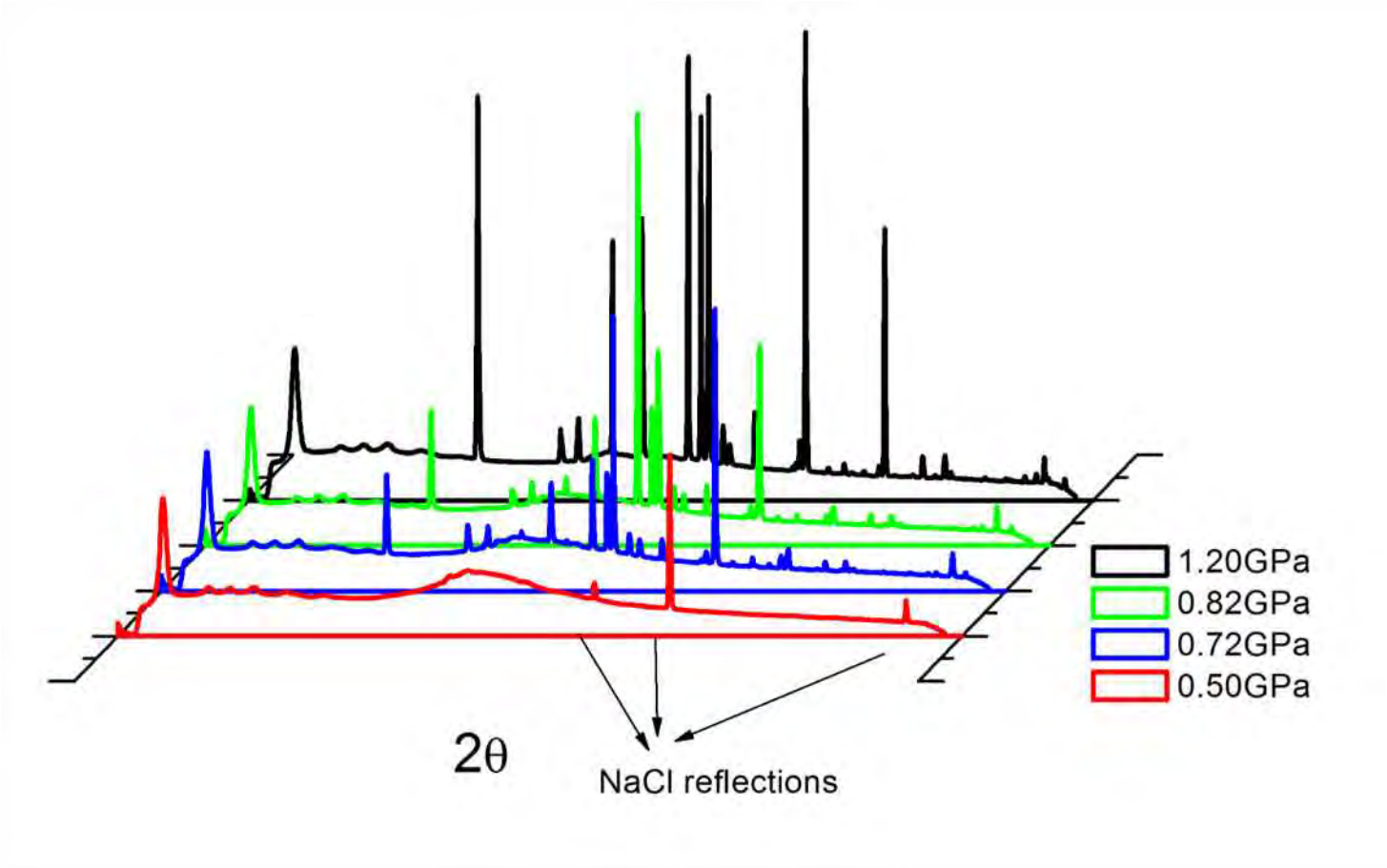
We present the high pressure phase transition behavior of a gold(I) –NHCs complex, in which the NHCs include one long N-alkyl substituent and one N-acetamido group, The amide group is an excellent hydrogen bonding motif to provide interaction force between molecule. The gold (I) − NHC series form metallogel in DMSO at room temperature. PXRD studies show that self-assembly of [Au(C16,amide-imy)2][NO3] forms a lamellar structure with tubular architecture around the metal ion head core. Through Coulombic, hydrogen bonding, and hydrophobic interactions between solvent and the amide group under ambient environment. In the high pressure PXRD experiment of [Au(C16,amide-imy)2][NO3] complex , the lamellar structure phase become less and less , but the long range order behavior start to reveal by bragg's Debye ring grown up in the 2-D diffraction pattern when the pressure increased, As pressure up to 2GPa, The indexing shown the long range order with 3-D symmetry by monoclinic Laue symmetry. This is the first example that phase transition from lyotropic liquid crystal gel phase to long range order solid phase. The inter-molecule interaction and structure will be presented in this report.

[1] *Tina H. T. Hsu, Jaishri J. Naidu, Bi-Jiuan Yang, et a.,*. Inorg. Chem. 2012, 51, 98 − 108.*



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