Project works for PH322

Term paper/projects for PH322 (2010)

1. Phase diagram of binary LJ mixture (P* vs ρ*) at T*=1 (Debarghya) (PRE, 58, 2201, 1998) (28th)
2. *LJ fluid confined in nanopore (Langmuir*, **2000**, *16* (22), pp 8529–8535) (Tarak) (30th)
3. Liqid-vapor interface in nano-pore (Physica A Volume 388, Issue 6, 15 March 2009, Pages 799-805) (Rajany) (27th)
4. Phase diagram of asymmetric banana LC (Santanu) (PRE, 67, 011703, (2003) (28th)
5. Adaptive force biasing (JCP, 115, 9169, 2001) (Darshan) (28th)
6. Potential of mean force (PMF) computation between two rods in a sea of sphere (Vinay), J. Chem. Phys. **129**, 114505 (2008)
7. Electric field induced stretching of polymer/DNA (Ashish /polypeptide) (30th)
8. Electric field induced stretching of DNA (Asmita) (Biophys J. 2004 February; 86(2): 681–689) (30th)

9. Phase behavior of mixture of rods and spheres (MC) Himabindhu (J. Chem. Phys. **111**, 4153 (1999);) (26th or 1st May)
10. Mixture of thin and thick rods (PRL, 94,057801 2005) (Brhmananda) (29th)
11. Interfacial surface tension of oil-water interface as a function of surfactant chain length (Ganesh), J. Phys. Chem 94, 6933 (1994) (26TH or 1st May)
12. Ripples in Boron-Nitride sheet (NATURE MATERIALS Volume: 6 Issue: 11 Pages: 858-861 Published: NOV 2007) (Vishwanath) (29th)
13. Flow induced voltage in nanotube (Baban) (Science, Sood, 2003) (29th)
14. Electrophoresis (ion or chain molecule) in nanopore. (Anoop) (Science, *2010 327 (5961) 64-67)*, *PNAS*, *101*, *12177 (2004) (30th)*

Term paper/projects for PH322 (2010)

1. liquid crystal ordering on a surface (surface could be graphite or smooth hydrophobic surface) (Shivanand kumar) (27th April)
2. Comparison of various entropy/free energy calculation methods for water. (Susmita) (29thApril)
3. Making the simu-md code MPI enable. (Arun) (27th April)
4. Charged spherocylinder in electric field. (Murthy) (27thApril)

5. Micelle formation in pore/confined geometry (Jaju) (28th April)
6. Ordering in Vibrated rods (Kingshuk) (1st May))
7. Polymer scaling under flow. (Rohit) (1stMay)

Presentation dates and timing: 27th April -1st May from 4-6 PM

Format of the term paper/presentation:

- Make a exhaustive literature search on the subject
- Write/present a good introduction on the subject
- State clearly the issues involved: issues already resolved and things not yet fully understood
- Describe the methodology of your study and relevance in the context of the problem
- Discuss all the results you get
- Highlights any significant results and its significance
- Give an outlook as to where do you stand in terms of solving the problem and what should be the next step

27th April: Rajany, Shivanand, Arun, Murthy, Anil
28th April: Debarghya, Darshan, Santanu, Jaju,
29th April: Brhmananda, Vshwanath, Baban, Susmita
30th April: Taraknath, Ashish, Asmita, Anoop,
1st May: Rohit, Kingshuk, Ganesh, Himabindhu, Vinay