

Quiz 4 November 22, 2010 Properties of Materials

- a) The 6-12 Lennard-Jones potential and the DLVO potential both involve two terms. Explain the similarities and differences between these two potentials.
- b) Obtain an expression for the sedimentation velocity using a force balance between viscous drag and gravity.
- c) What is the zeta potential?
- d) How can the zeta potential be measured?
- e) The equation $S = k \log W$ is carved on Boltzmann's grave in the Central Grave Yard of Vienna. W is the number of states that a system can have. Explain how this can be used to calculate the concentration of ions subject to an electrical field Φ ?

□□□□□□□□□□□□□□□□