

PUU-19.3010 CHEMISTRY OF PAPERMAKING, TENTTI 1.6.2009

1. Give examples of at least two of each of the three types of colloids that occur in papermaking processes. What kind of papermaking problems can be solved with help of surface and colloid chemistry?
2. Charge properties of fibres are important for different pulp and paper properties as well as in different papermaking unit operations. Give examples of those and describe shortly the surface chemical phenomena occurring in those examples.
3. The use of cationic polymers as flocculants and retention aids is often disturbed by dissolved wood polymers in the process water. What are the principal colloidal interactions giving rise to this disturbance and what can be done to reduce this disturbance?
4. Describe with help of surface energy of different components and theory of spreading which surface phenomenon sizing of paper is based on.
5. Describe surface chemical interactions between paper and ink. Give examples of methods and substances that have been used to study those interactions.