

KE-40.4140 Environmental catalysis

Exam 15.12.2008 8 – 13. Please give full but short answers in English or in Finnish.

1. Catalysts have several important effects on chemical processes. Which of these effects can be derived directly from the definition of catalyst?
2. What are the benefits of the catalytic oxidation? Give examples of the use of oxidation catalysts?
3. Explain shortly (reactions, catalysts, conditions, etc.)
  - i. Steam reforming
  - ii. Autothermal reforming
  - iii. Partial oxidation
  - iv. Dry reforming
4. What are the principles of the following catalyst characterization methods? And what information is gained with these methods?
  - i. XRD
  - ii. EXAFS
  - iii. XANES
5. What are the main differences between ALD- and CVD-method?