

Dear Students,

I hope you and your families are in good health. By now, you should be done with the Introduction module. In here, I will giving you resources for the next two modules.

Evaluation of Conventional Technologies: *Evaluation of present process technologies for ammonia, sulphuric acid, caustic soda, pulp and paper, plastics and polymers synthesis. Analysis of raw materials, intermediates, final products, by-products and wastes.*

Alternate Technologies: *Alternative raw materials, low temperature and low pressure and low energy consuming routes for the manufacture of caustic soda, leather, plastics, pulp and paper and rayon.*

For the second module, **Evaluation of Conventional Technologies**, you must go through the said processes from Dryden's Outlines of Chemical Technology for 21st Century or Shreve's Chemical Process Industries, which you must have studied in the course Chemical Technology in your previous semesters. You may also refer to these resources on NPTEL.

- <https://nptel.ac.in/courses/103107081/>
- <https://nptel.ac.in/courses/103106108/>

For the third module, **Alternate Technologies**, course material is attached.

Ammonia: <https://www.aiche.org/resources/publications/cep/2016/september/introduction-ammonia-production> (attached as Ammonia)

Leather: Palanisamy Thanikaivelan , Jonnalagadda Raghava Rao , Balachandran Unni Nair & Thirumalachari Ramasami (2005) Recent Trends in Leather Making: Processes, Problems, and Pathways, Critical Reviews in Environmental Science and Technology, 35:1, 37-79, DOI: 10.1080/10643380590521436 (attached as Leather)

Caustic Soda: 1. Handbook of Chlor-Alkali Industry, Chapter 15 (attached as CausticSodaI)
2. The chlor-alkali process: A review of history and pollution (attached as CausticSodaII)

Pulp and Paper: 1. Alternative Energy Sources and Technologies for the Pulp and Paper Industry (attached as PulpI)
2. Alternative Raw Materials for Pulp and Paper Production in the Concept of a Lignocellulosic Biorefinery. (attached as PulpII)

Plastics: A brief overview of renewable plastics, Materials Today Sustainability Volumes 7–8, March 2020, 100031 (attached as Plastics)

Rayon: <https://nptel.ac.in/courses/103107081/> - Module 8, Lecture 8

Make sure you thoroughly read through these resources. In case you need further help, please email me on fatima@nitsri.ac.in.

Stay safe.

Best,

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