Chem 466

Lecture #1

01/14/2014

⊗ Enrollment discussion

- engineering vs. chem vs. other
- grad. vs. undergraduate

⊗ Syllabus discussion

- contact info
- office hours + cancellations announced during lectures
- course website — important
  - lecture notes
  - hand-outs
  - exam + quiz keys
  - exams from previous years for practice
- textbook
  - 1 or 2 copies in library
- grading
  - quizzes weekly (Tues. or Thurs.)
  - exams dates in calendar
  - either quiz total or 1 exam score dropped from final grade
- calendar
  - tentative content/material for lectures
  - firm dates for exams

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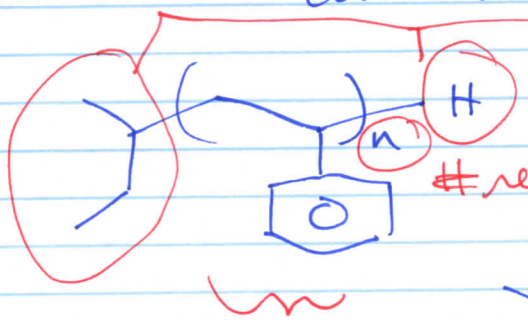
⊗ Slide set discussion

- demos
  - beads in flasks
  - x linked chains
  - PET H_2O bottle (poly bottle, label, ink, cap)
- hand-out
  - E.W. Meijer et al. Adv. Mater. 2000, 12, 874–878.

Polymer Examples

- polystyrene of slide set
  - polystyrene is one word
  - common uses – styrofoam, e.g.

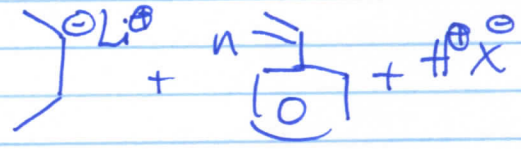


chain ends are important too
- can influence properties
- indicate synthetic method

repeat units

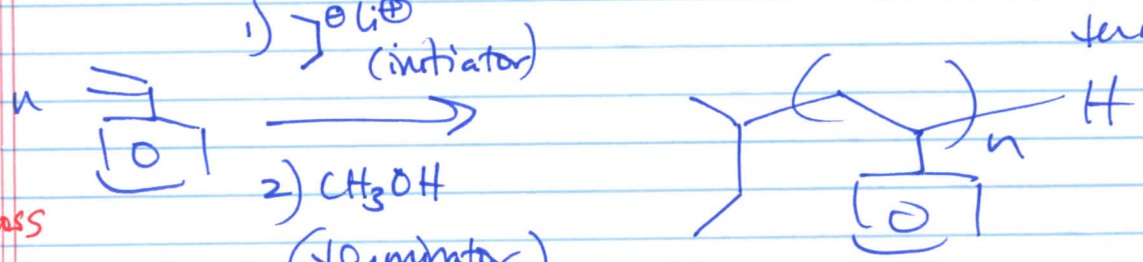
repeat units form the majority of the polymer structure + composition + dominate the properties

retrosynthesis



building blocks, but cannot be combined all at once together

– synthesis

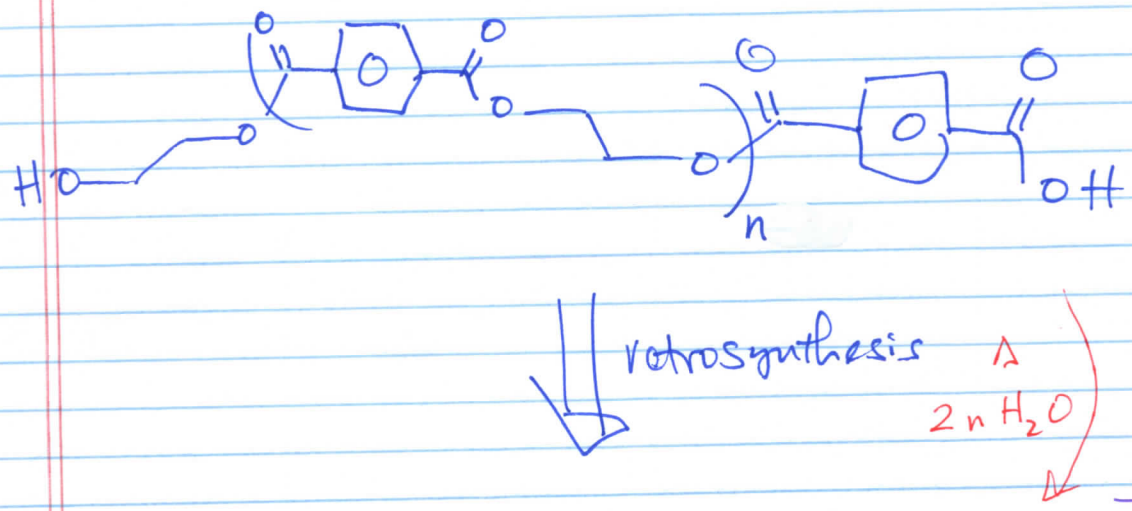


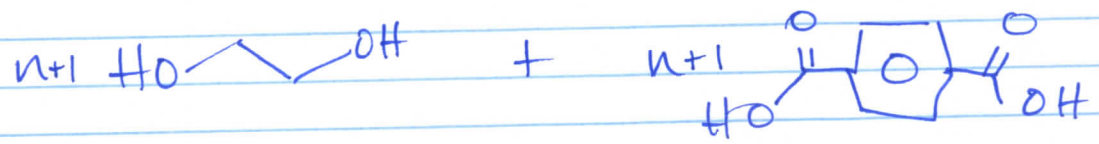
(add'n across C=C for polym.)

a chain-growth / addition polym

DEMO: PS cup w/hot H_2O vs. acetone

- poly(ethylene terephthalate) of H_2O bottle
  - poly(ethylene terephthalate) is 2 words
  - common uses drink bottles, e.g.





a step-growth condensation polym.

(a condensation by-product during polym.)