Chem 654, Spring 2003
Handout

Problem Set 1. due 02/03/03

1. Draw the repeating unit chemical structures of the linear polymers made from the following ingredients and describe their preparation methods.
   a) Alternating copolymer of styrene and maleic anhydride
   b) Polyurethane from toluene di-isocyanate and butanediol
   c) Polycarbonate from bisphenol A and phosgene
   d) Poly(2-hexylthiophene)
   e) Polyimide from pyromellitic anhydride and phenylene diamine

2. Draw the local chemical structures of the networks resulting from the following chemicals.
   a) Pentaerythritol and phthalic anhydride
   b) Phenol and formaldehyde
   c) Urea and formaldehyde
   d) Epichlorohydrin, bisphenol A and hexamethylene diamine

3. Identify principal components with structures for the following trade name polymers.
   a) Nylon 6,6
   b) Orlon
   c) Dacron
   d) Kapton
   e) Mylar
   f) Formvar
   g) Plexiglas
   h) Tygon
   i) Neoprene