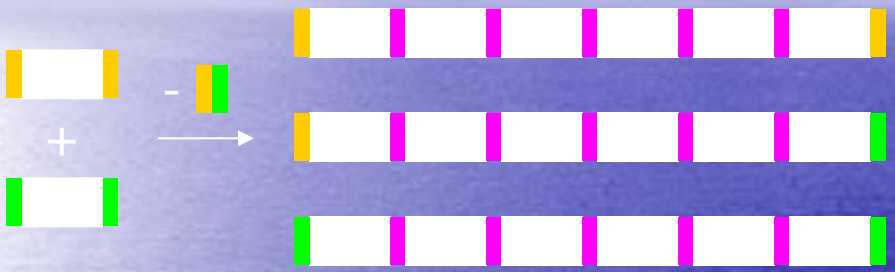
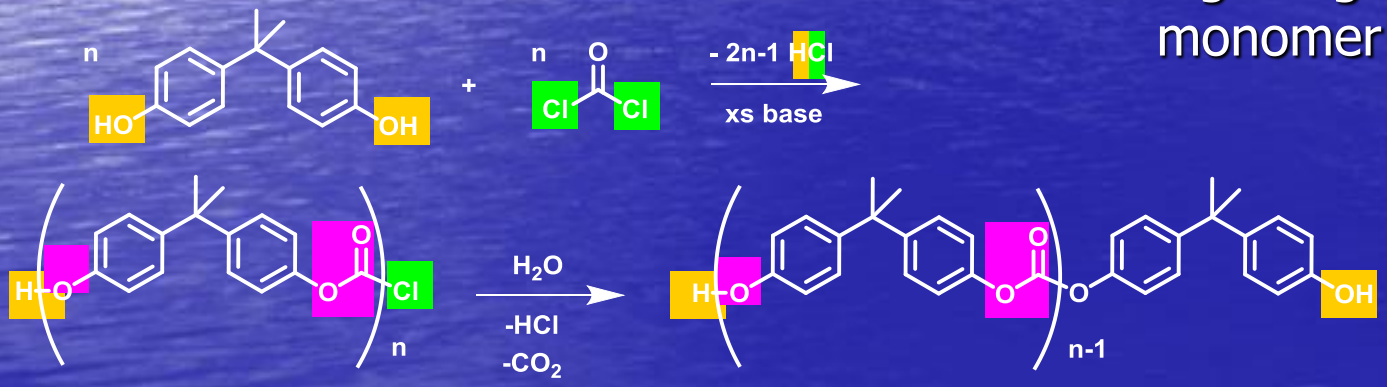
Condensation *vs.* Addition Polymerizations



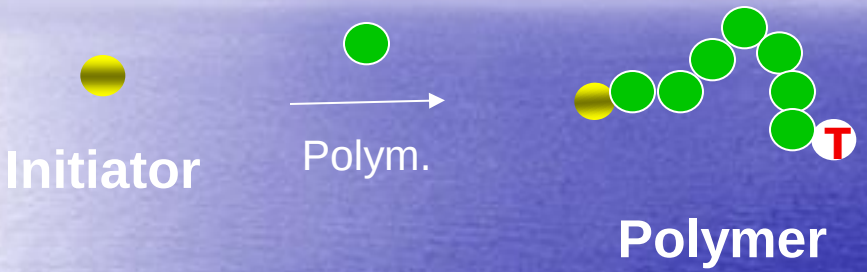
Two sites (AB or AA + BB) give a linear polymer chain

- Step-growth mechanism
- Often afford a condensate by-product (monomer and repeat unit not equivalent)
- High degrees of polymerization (α molecular weight) are obtained only at high degrees of conversion of monomer
- Non-living, except in a few cases (*e.g.*, Yokozawa)



Polycarbonate *via* condensation of bisphenol A and phosgene; an example of an AA + BB polymerization

Condensation *vs.* **Addition** Polymerizations



Polystyrene *via*
non-living/non-controlled (traditional)
radical polymerization

- Chain-growth mechanism
- An initiator is required
- High degrees of polymerization at low or high degrees of conversion of monomer
- Termination can occur *via* several events
- Monomer and repeat unit compositions (not structures) often equivalent
- Non-living or living/ controlled conditions