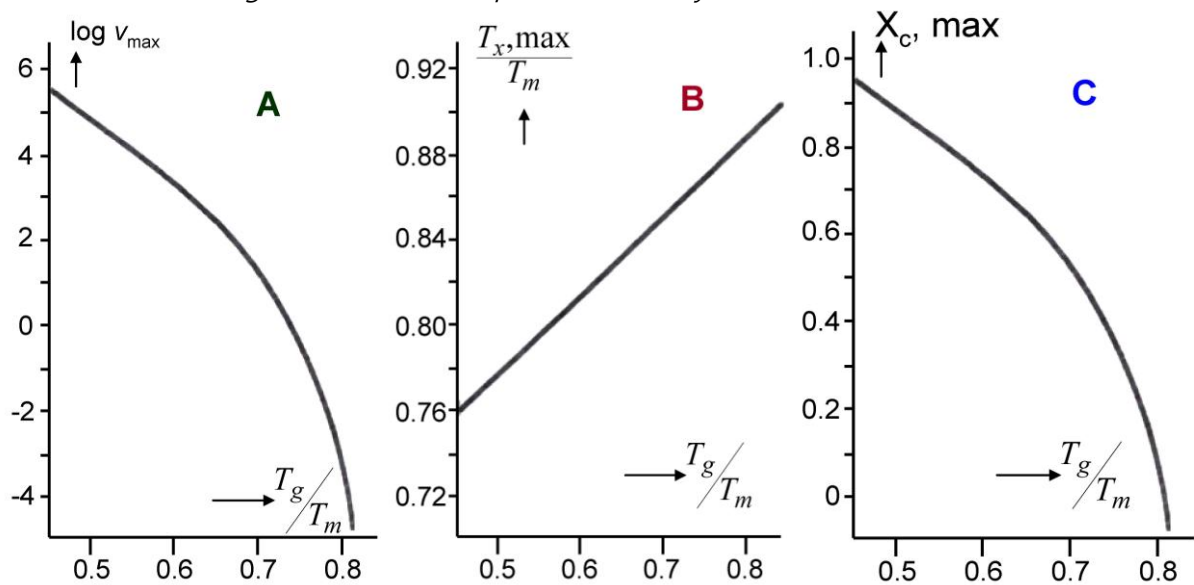Homework #2: Polymer physics

1. Estimate the below values for isotactic polystyrene with T_g= 373 K and T_m= 513 K (Use Fig 1).
   (a) the temperature of maximum crystallization velocity
   (b) the linear growth rate at this temperature
   (c) the maximum degree of crystallinity

Fig 1. The three main parameters of crystallization

2. We have learned crystal structures of polymer. Describe the morphological models of polymeric crystalline structures with respect to modes of crystallization and microstructures of crystallites. Guess the mechanical properties of each polymer.