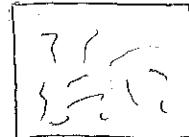


Friday 18th, December, 1998 - meeting with Prof. Teyssié

They take a micrograph (for something with a low T_g like PEG you would need to do this at low temperatures).

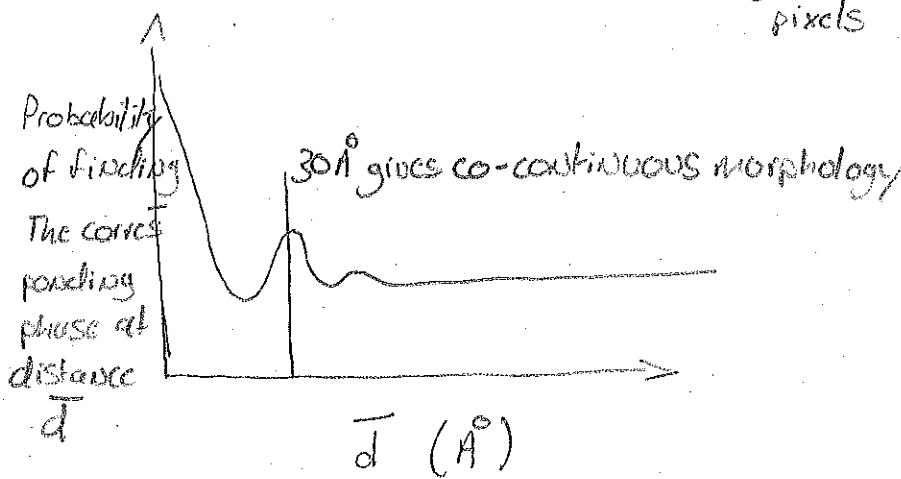


They linearize this
using a computer
program "Visilog"



This can be used to
give what are
called covariance
curves

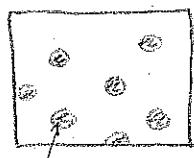
image 500x500
pixels



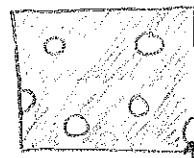
Examples of different morphologies



co-continuous



polymer dispersions



SiO_2

↓
impact resistant glass

↓
reinforced polymer

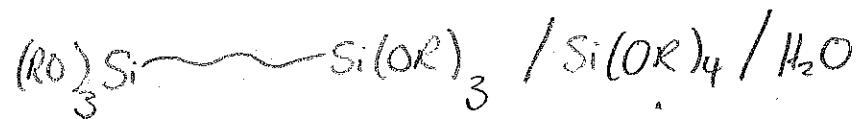
this could give a biodegradable
if the polymer degrades since
you have easy access to it

Reactions can be of the type:

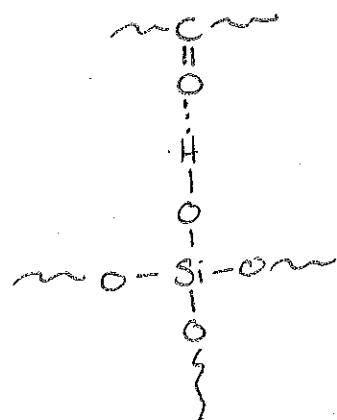


but these are usually slow.

They can also be of the type:



These give faster reactions, but slow as conversion approaches 100%. To help complete them polar groups can be placed along the polymer backbone to give interactions such as:



Also, heating can help drive the reaction to completion

Both \bar{d} or ϕ dispersed particles are functions of composition and polymer MW (for co-continuous)

It may be interesting to make all three types of morphologies and study them using a mechanical spectrometer which looks at G' , G'' , and $\tan \delta$ as a function of frequency or temperature.

As for stars of PIB attached to a silica core you will probably want high arm MW's ($\sim 100,000$ g/mol). You will also want to vary the wt % of each component. You may have to conduct the reaction in a mixture of solvents such as THF/H₂O.