

From Lecture 11, slide 5, the parameters obtained by fitting the stress relaxation experiment results with the Maxwell-Weichert Model for the four alginate hydrogels are as follows:

A table with numbers and a number of objects

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The 35 kDa hydrogel has the smallest molecular weight, and its model parameters are:

* Tau1 = 81
* E1 = 0.5
* Tau2: 900
* E2 = 0.5

Slide 4 of Lecture 11, gives the equations for the components of the complex modulus G:

G = G’ + i G’’

Where

* G’ = E1 \* (Tau12  w2 / (1+ Tau12 w2 )) + E2 \* (Tau22  w2 / (1+ Tau22 w2 ))
* G’’ = E1 \* (Tau1 w/ (1+ Tau12 w2 )) + E2 \* (Tau2 w/ (1+ Tau22 w2 ))
* w = 2 \* \* f

Using these equations for 0 < f < 1 kHz, we obtain the following plot:

A graph of a storage module

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