

Influence of high energy electron irradiation on the network structure of gelatin hydrogels as investigated by small-angle X-ray scattering (SAXS)

Supplementary Information

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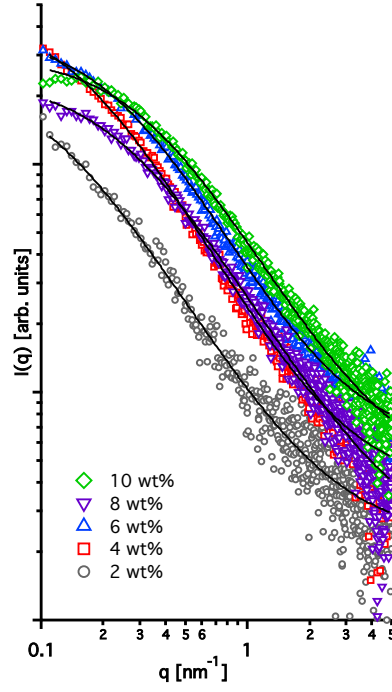


Figure S1: Unshifted SAXS profiles for gelatin of increasing concentration from 10 wt% to 2 wt% (top to bottom), shown fit with the correlation length model.

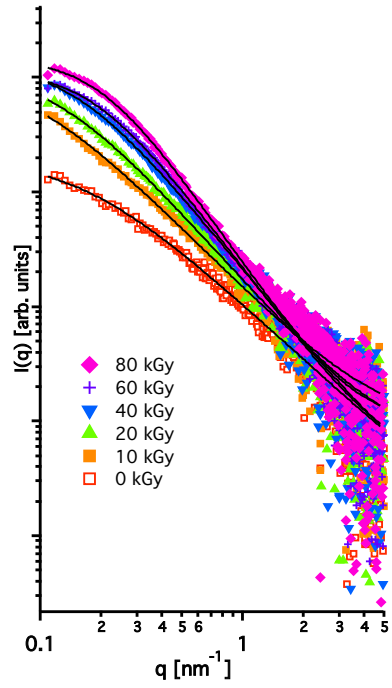


Figure S2: Unshifted SAXS profiles for 4 wt% gelatin with increasing irradiation dose from 80 kGy to 0 kGy, shown fit with the correlation length model.

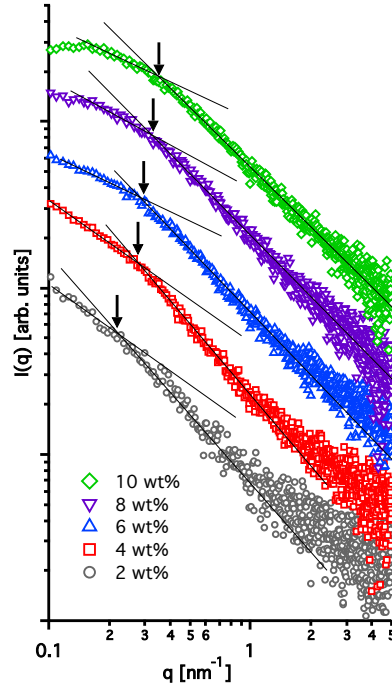


Figure S3: SAXS profiles with fitting for the scattering shoulder (crossover between two power law regimes) for gelatin of increasing concentration from 10 wt% to 2 wt% (top to bottom).

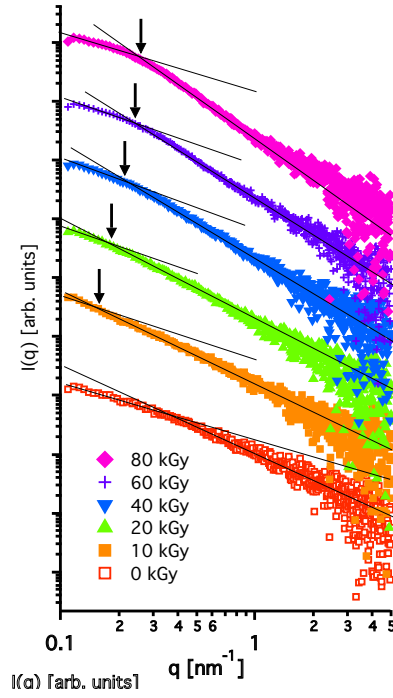


Figure S4: SAXS profiles with fitting for the scattering shoulder (crossover between two power law regimes) for 4 wt% gelatin with increasing irradiation dose from 80 kGy to 0 kGy (top to bottom).

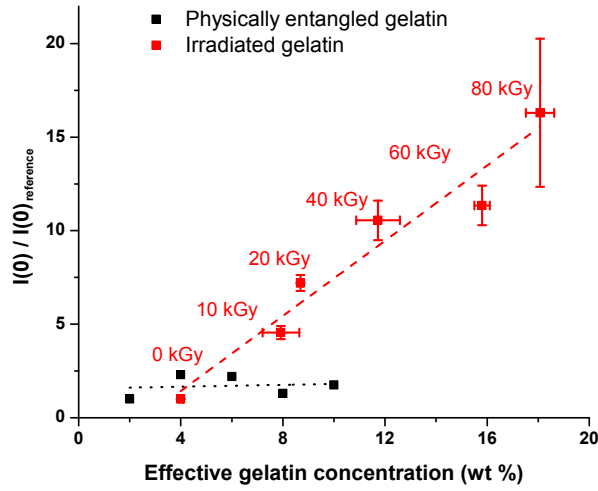


Figure S5: The scattering intensity extrapolated to the scattering vector $q = 0$, $I(0)$, is plotted with respect to the effective gelatin concentration, shown with linear fits. $I(0)_{\text{reference}}$ was taken from the first sample in each series, i.e. 2 wt% for the physically entangled gels and 0 kGy, 4 wt% for the irradiated gels. The irradiation doses are indicated above the data from the irradiated gelatin hydrogels. For the irradiated gelatin, the effective concentration was recalculated by the change in sample weight before and after irradiation, assuming only water was lost during crosslinking. The linear increase in the relative scattering intensity for the irradiated samples may stem from an increase in the molecular mass of the scattering objects due to crosslinking.

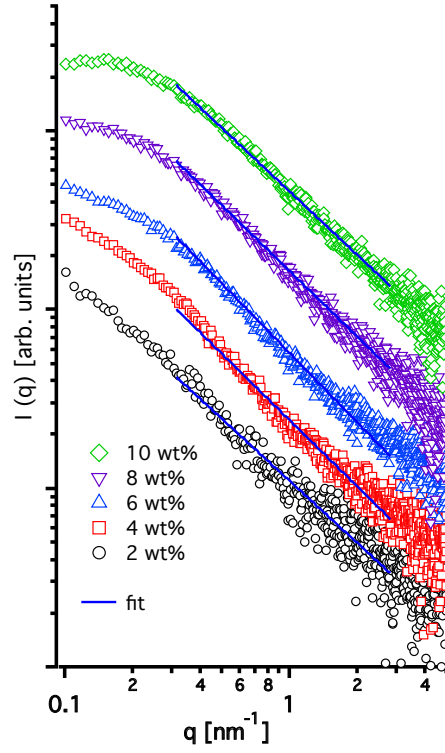


Figure S6: Power law fits of the SAXS profiles for gelatin of decreasing concentration from 10 wt% to 2 wt% (top to bottom).

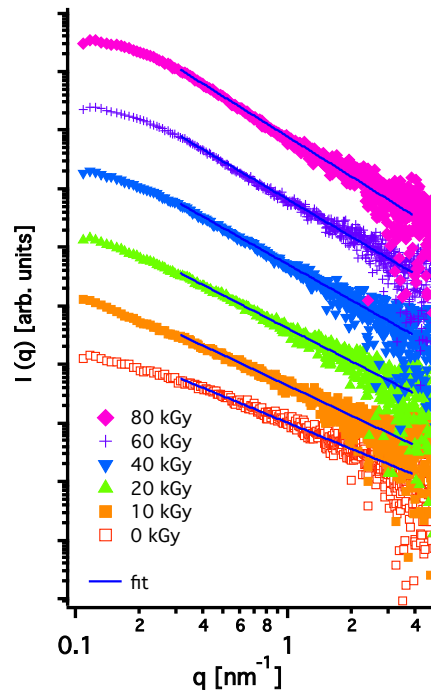


Figure S7: Power law fits of the SAXS profiles for 4 wt% gelatin with increasing irradiation dose from 80 kGy to 0 kGy (top to bottom).