Persistence and variation in microstructural design during the evolution of spider silk

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SUPPLEMENTARY INFORMATION

FIGURE METHODS

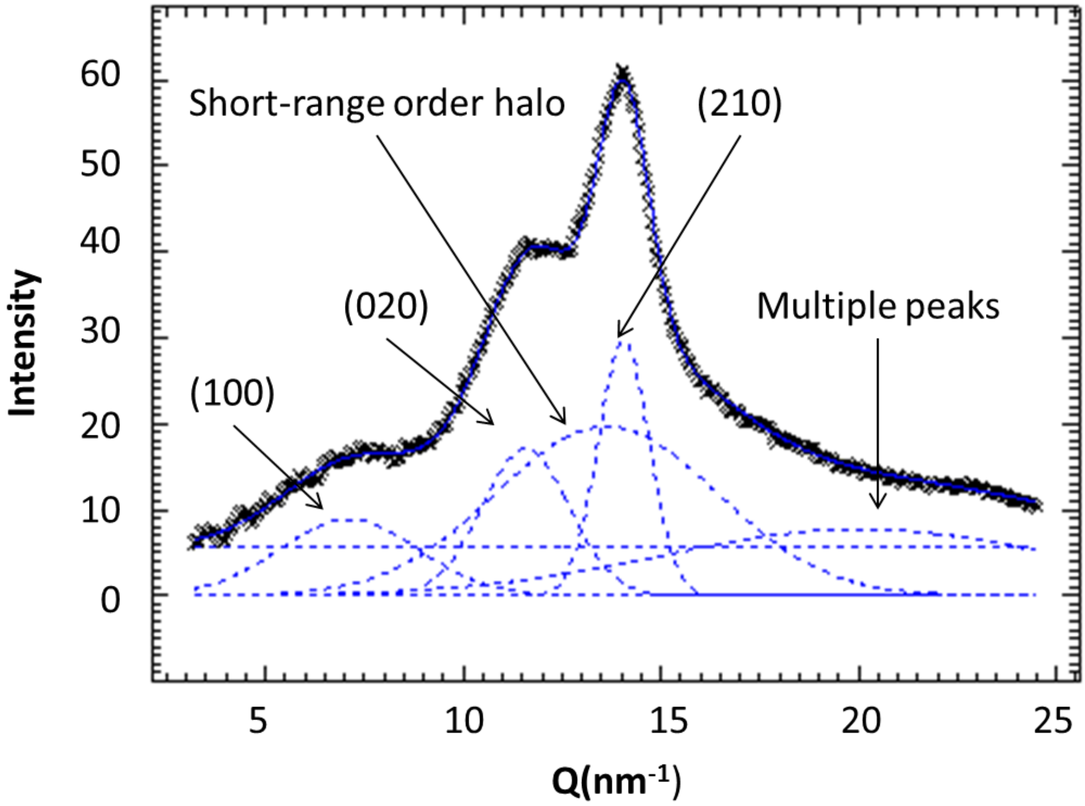

Figure Methods 1: Representative azimuthal integration of an XRD diffraction pattern, and deconvolution into different contributions. The experimental profile is fitted using Gaussian functions for the Bragg reflections and short-range-order scattering, and a constant for the residual background scattering of the sample. Experimental data correspond to a maximum supercontracted fiber spun by a *Caerostris darwini* spider.

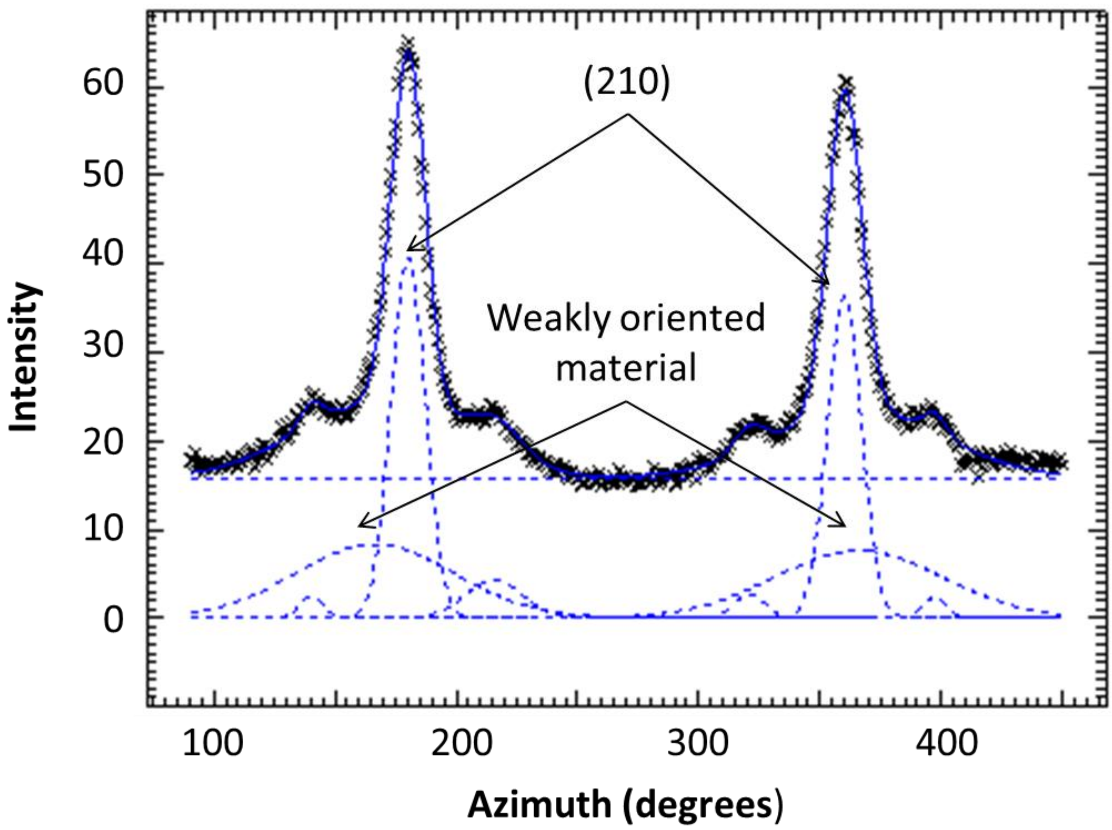

Figure Methods 2: Representative azimuthal fit of the radially integrated (210) reflection from an XRD pattern of a maximum supercontracted MAS fiber spun by a *Caerostris darwini* spider assuming Gaussian functions for the Bragg reflections and a constant background.

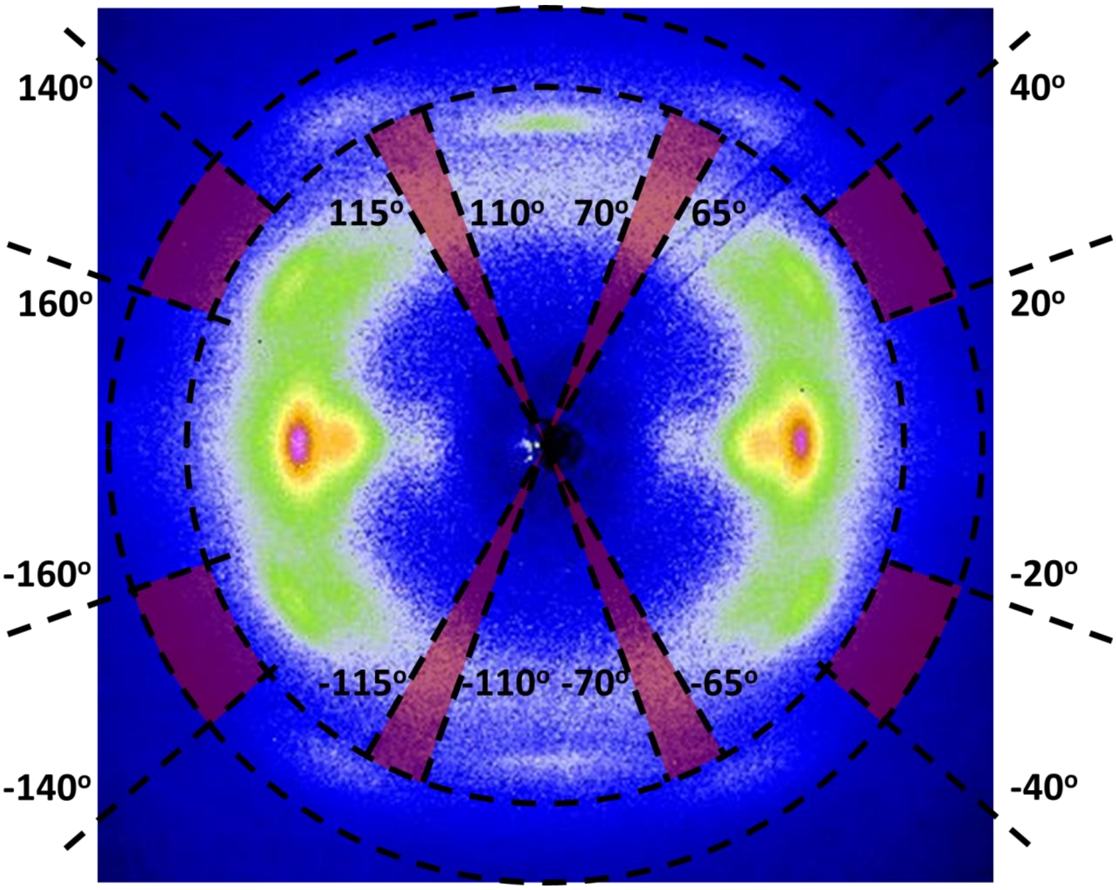

Figure Methods 3: Scheme of the areas selected to calculate the average intensity produced by the amorphous fraction of the fiber by azimuthal integration. XRD pattern corresponds to a *Caerostris darwini* MAS fiber. Angles were adjusted, if necessary, for other patterns in order to select areas where the intensities of the Bragg peaks can be considered negligible.