Supplementary Material

In the sensitivity analyses, averaged values (for 5th, median and 95th percentile strain) based on six ONHs are reported (Supplementary Figures I, II and III), along with p-values (labeled on the left of each data curve) from repeated measures ANOVAs (null hypothesis: no difference in the mean of 5th median or 95th percentile strain values due to artificial variation; corrected with Greenhouse-Geisser procedure). For instance, in Figure I.a, Asterisks (***)) indicate that 95th percentile strain (with means represented by triangles) under four conditions (LC fiber concentration factors multiplied by 0, 0.5, 1 and 2), are not following the same distribution. Thus the difference in peak strains is likely the result of increasing the LC fiber concentration factor.

Every time an ANOVA rejected the null hypothesis for sensitivity analyses targeting the preferred fiber orientation, a post hoc analysis using Scheffe’s procedure (most conservative method) was performed to examine pairwise differences (i.e., Original vs Circumferential, and Original vs Meridional). A thickened line connecting two consecutive data points indicates no significant difference for that data pair (Supplementary Figure II).