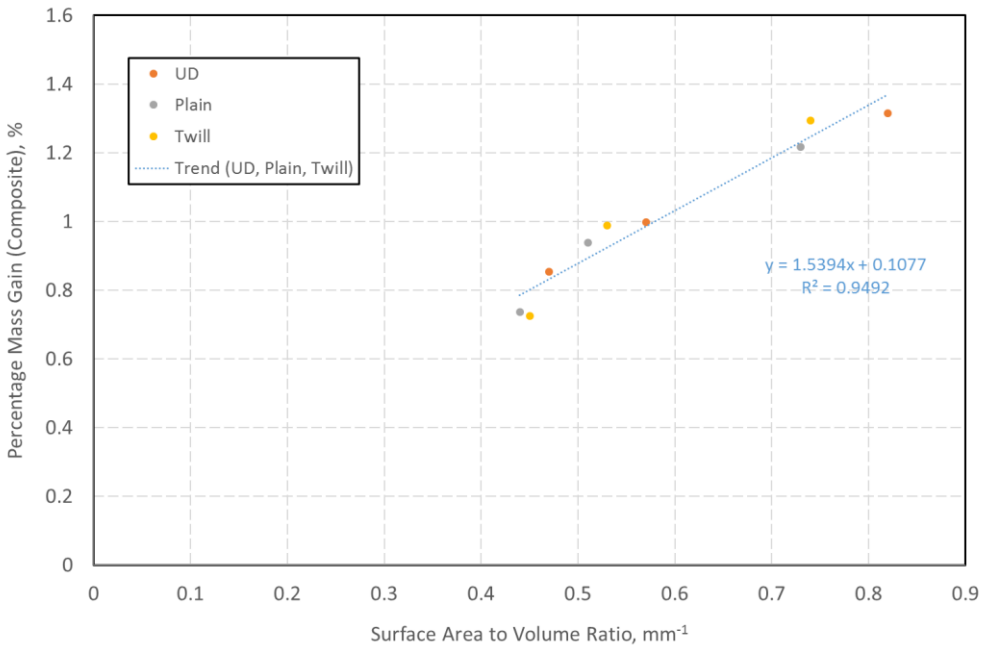

Fig. S1. *Mass gain versus surface to volume ratio (composite).*

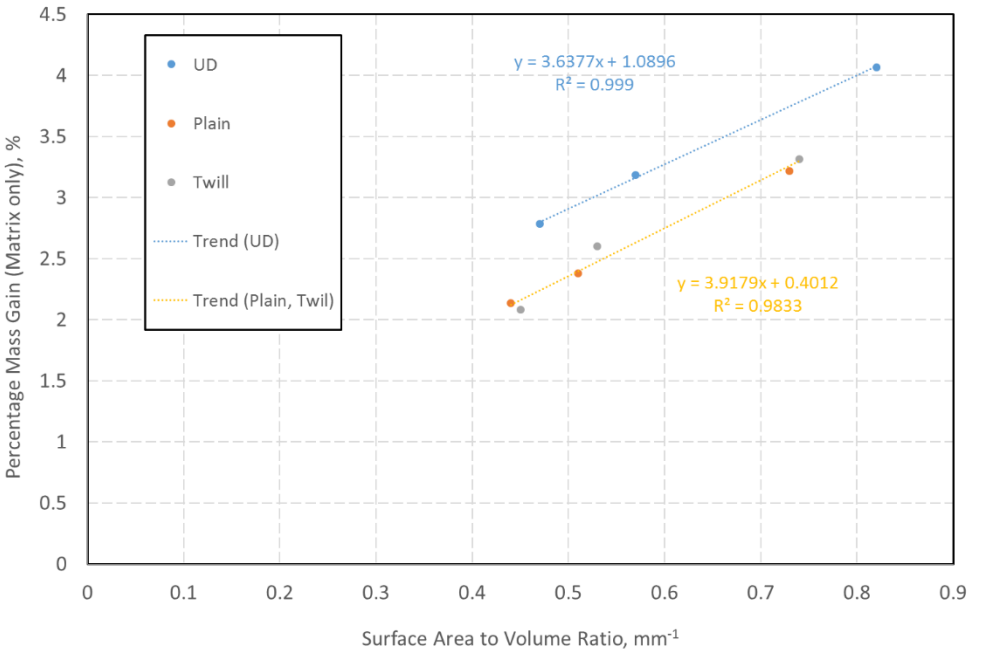

Fig. 2. *Mass gain versus surface to volume ratio (matrix).*

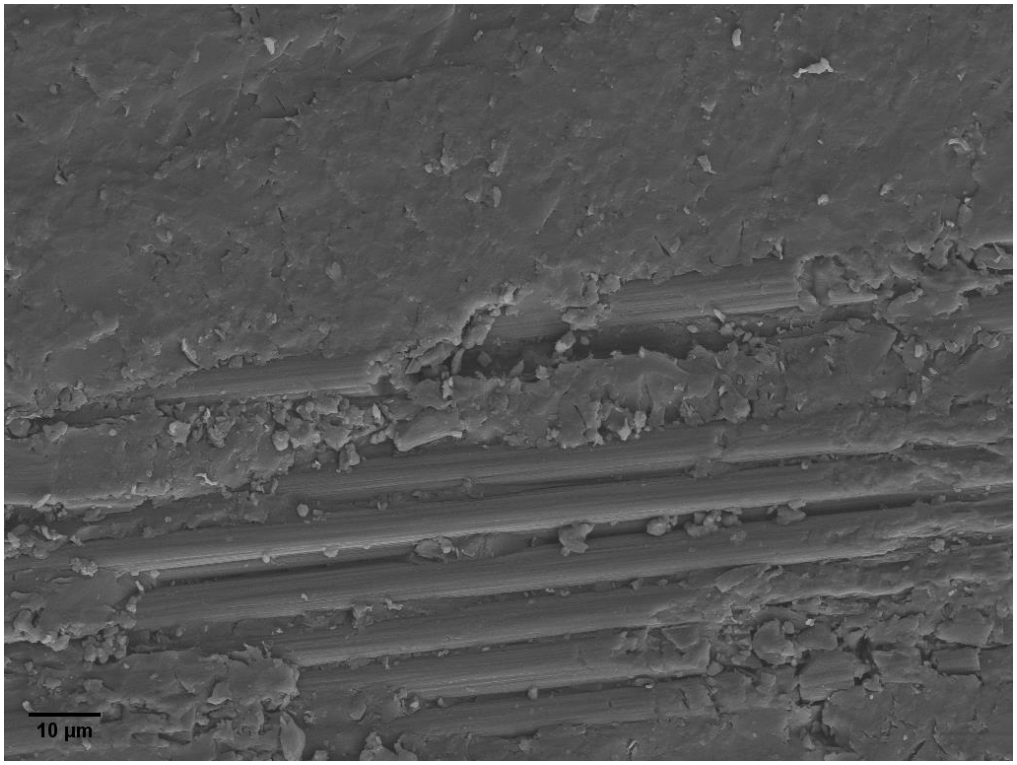

Fig. S3*. SEM micrographs of un-aged plain weave surface.*

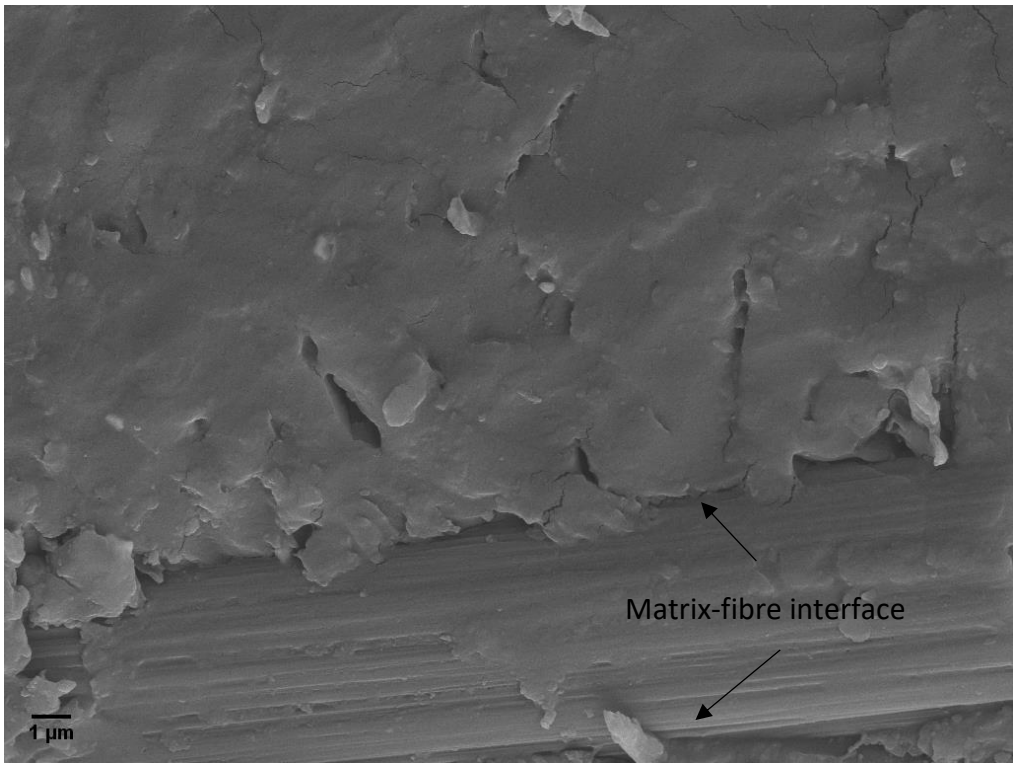

Fig. S4*. SEM micrographs of un-aged plain weave surface.*

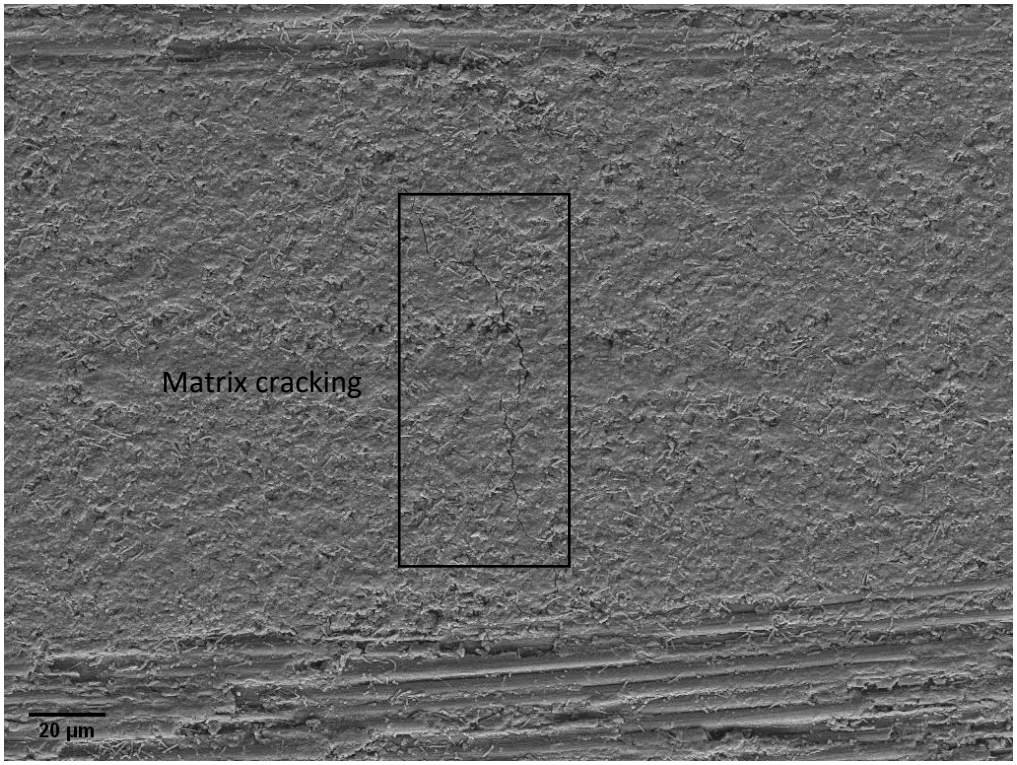

Fig. S5*. SEM micrographs of aged plain weave surface.*

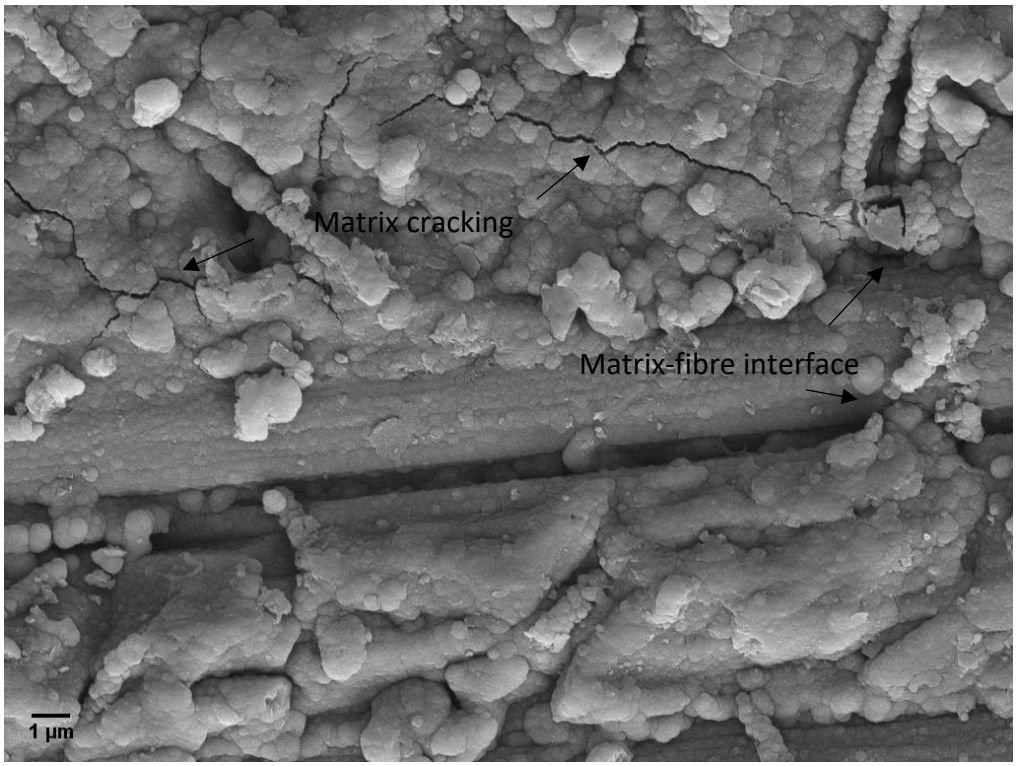

Fig. S6*. SEM micrographs of aged plain weave surface.*

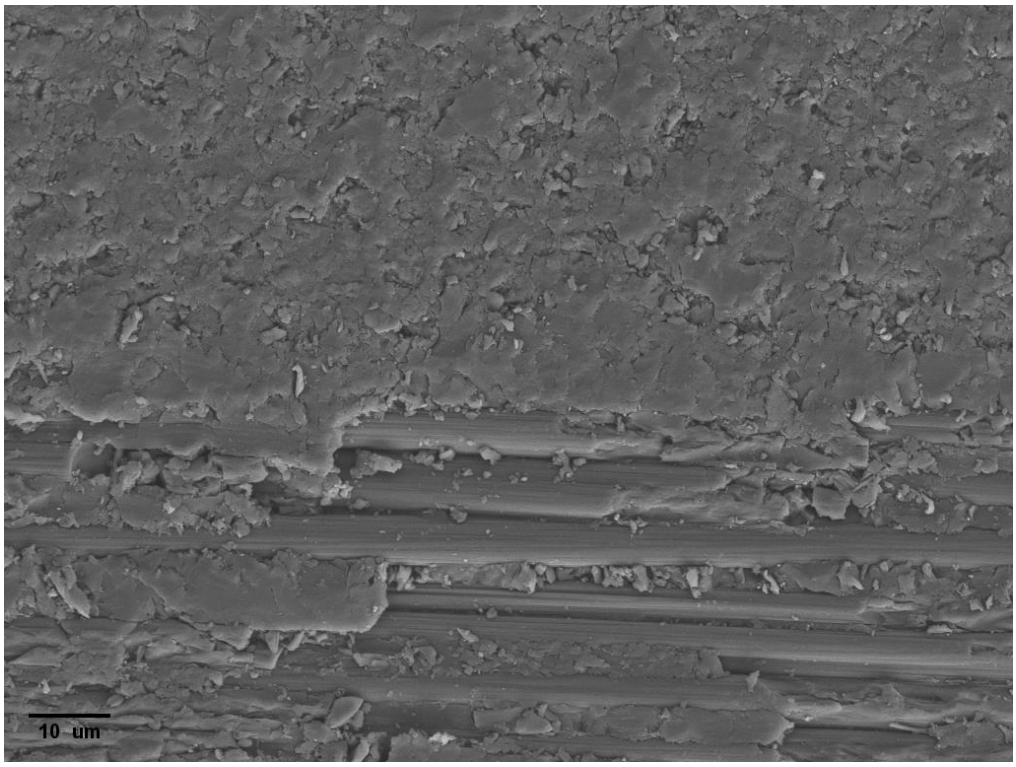

***Fig. S7**. SEM micrographs of un-aged twill weave surface.*

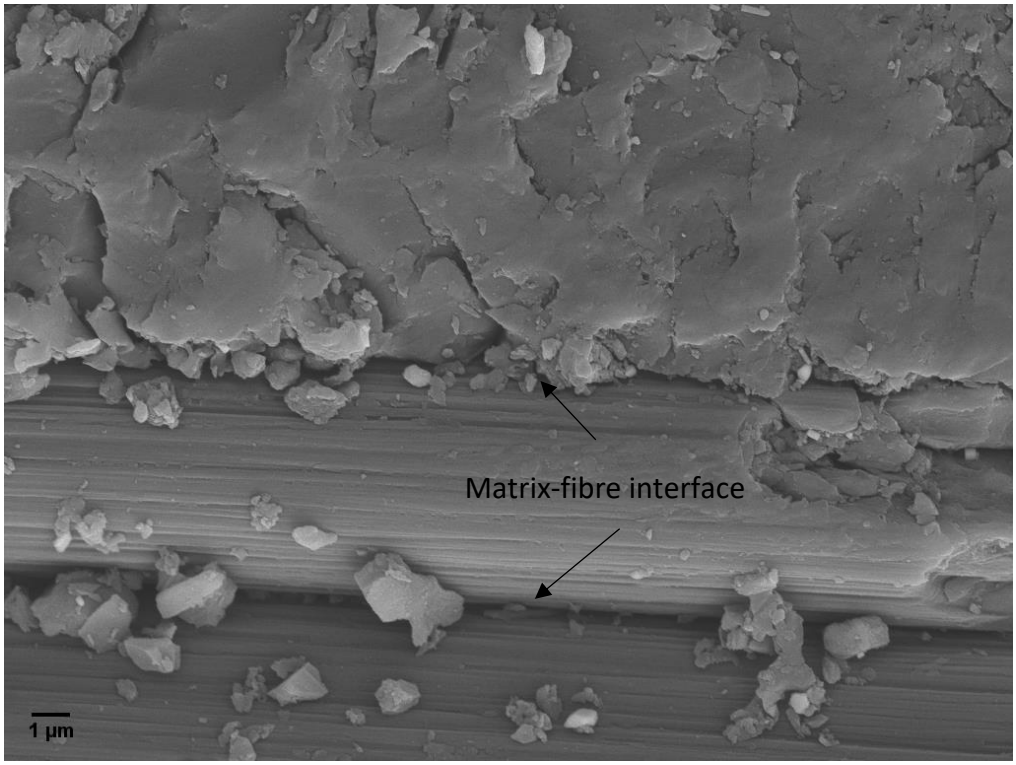

***Fig. S8**. SEM micrographs of un-aged twill weave surface.*

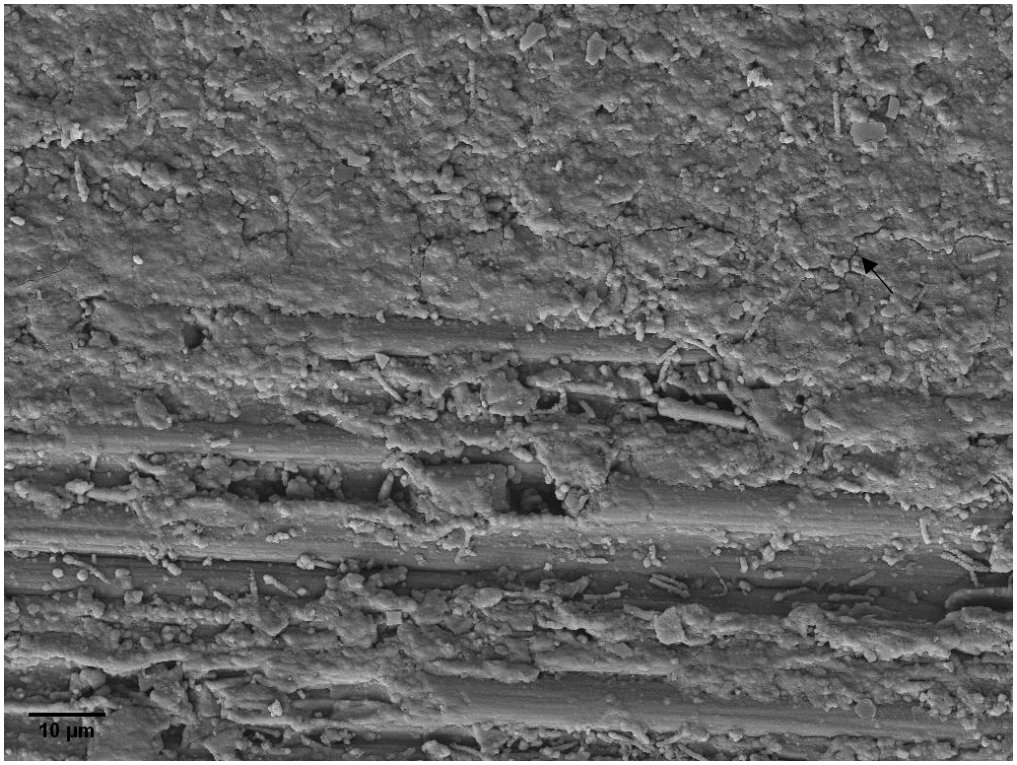

***Fig. S9**. SEM micrographs of aged twill weave surface.*

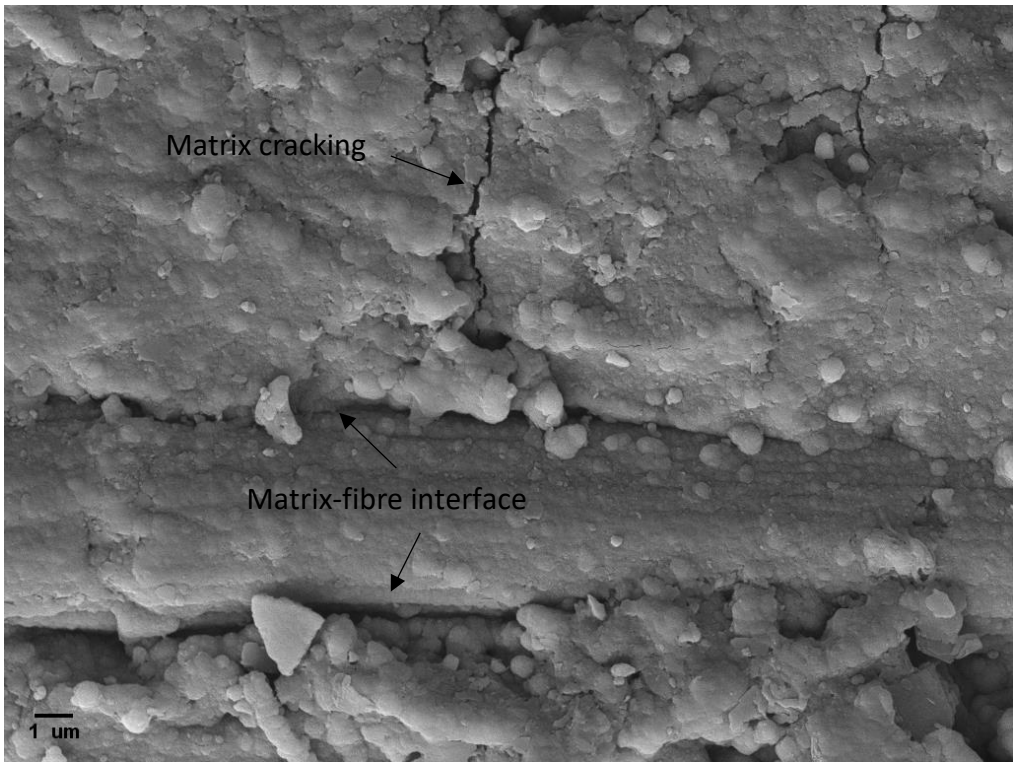

***Fig. S10**. SEM micrographs of aged twill weave surface.*

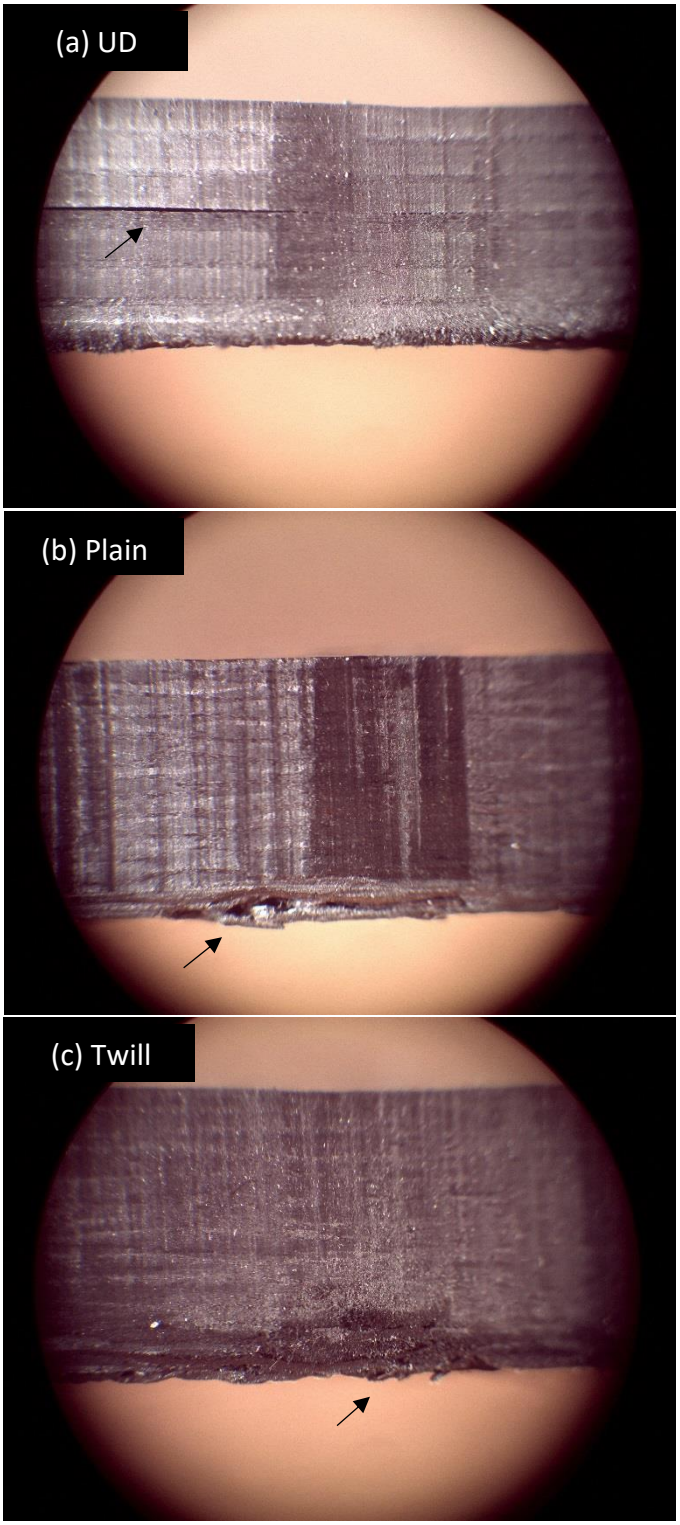

***Fig. S11**. IDR specimens after 20J impact; images are showing a length of 12mm (±0.25mm) of the middle section of the specimen's impact damage area.*

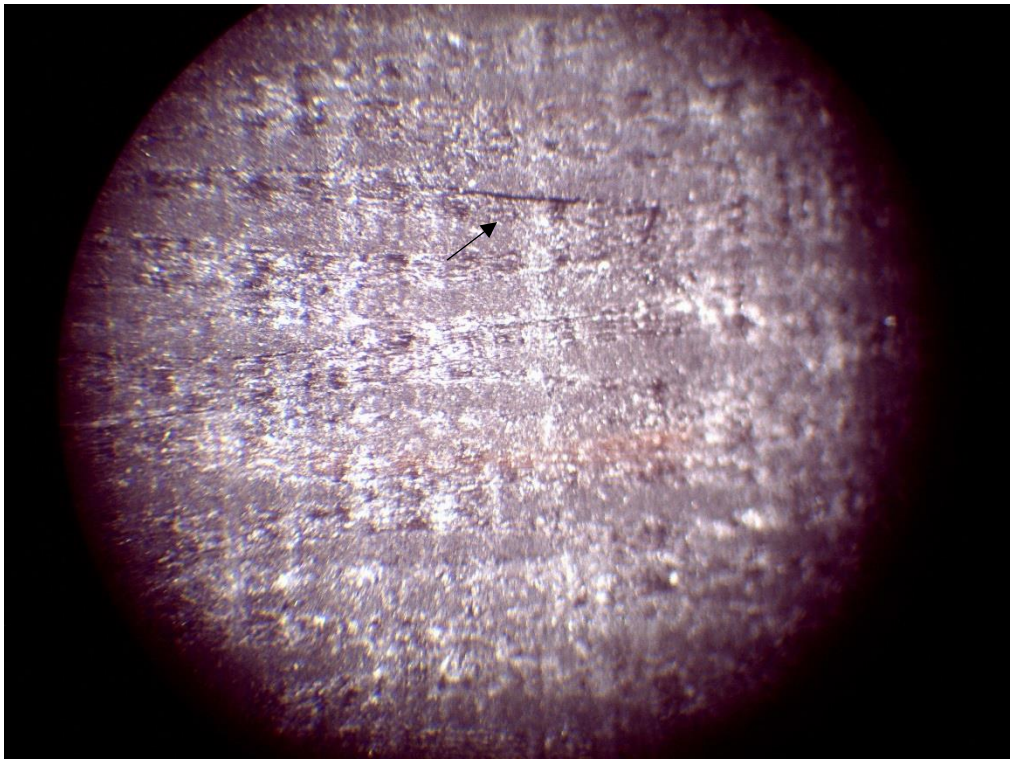

***Fig. S12**. Single delamination failure mode observed for 3PB un-aged plain specimens.*

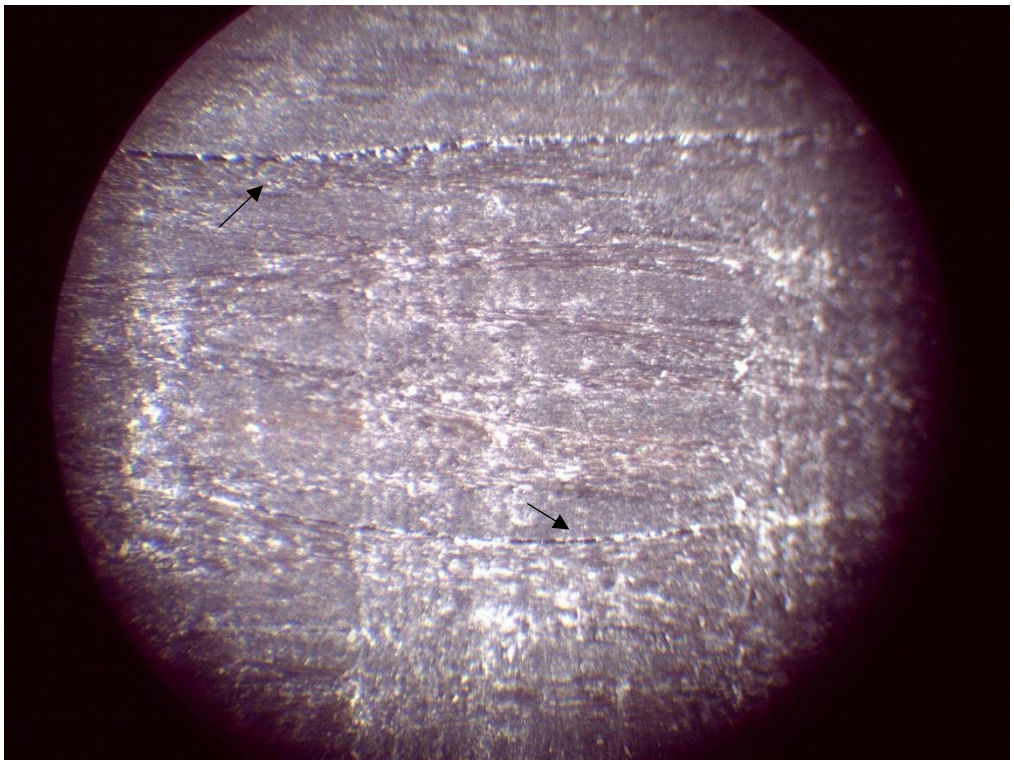

***Fig. S13**. Multiple delaminations failure mode observed for 3PB aged plain specimens.*

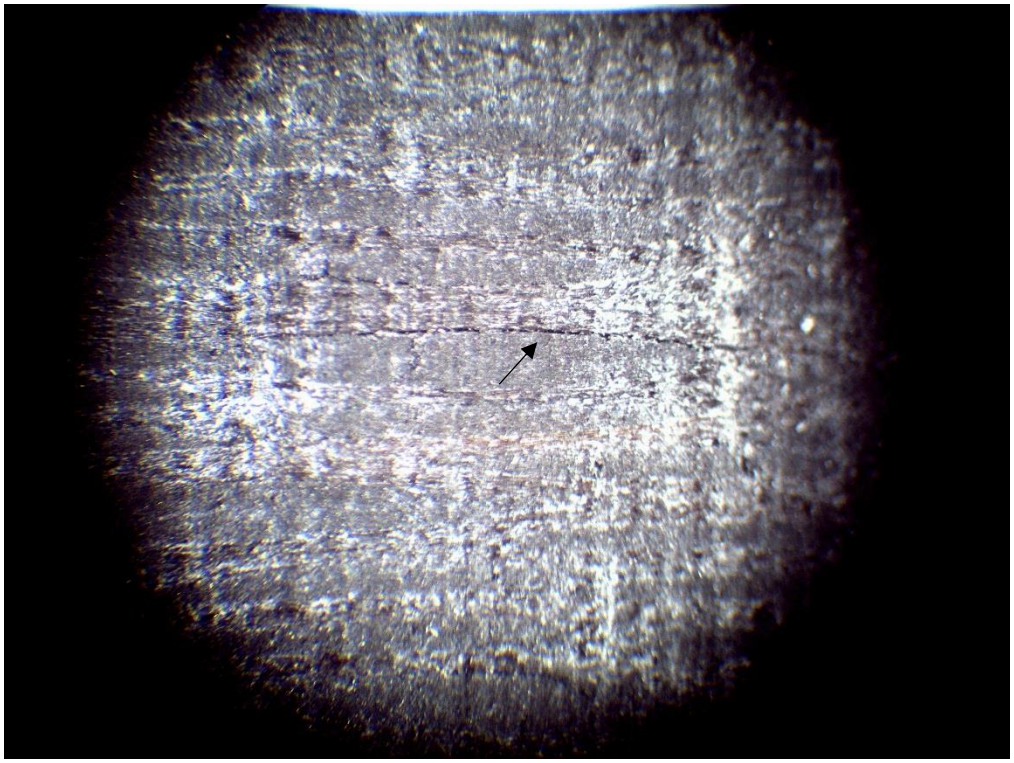

***Fig. 14**. Single delamination failure mode observed for 3PB un-aged twill specimens.*

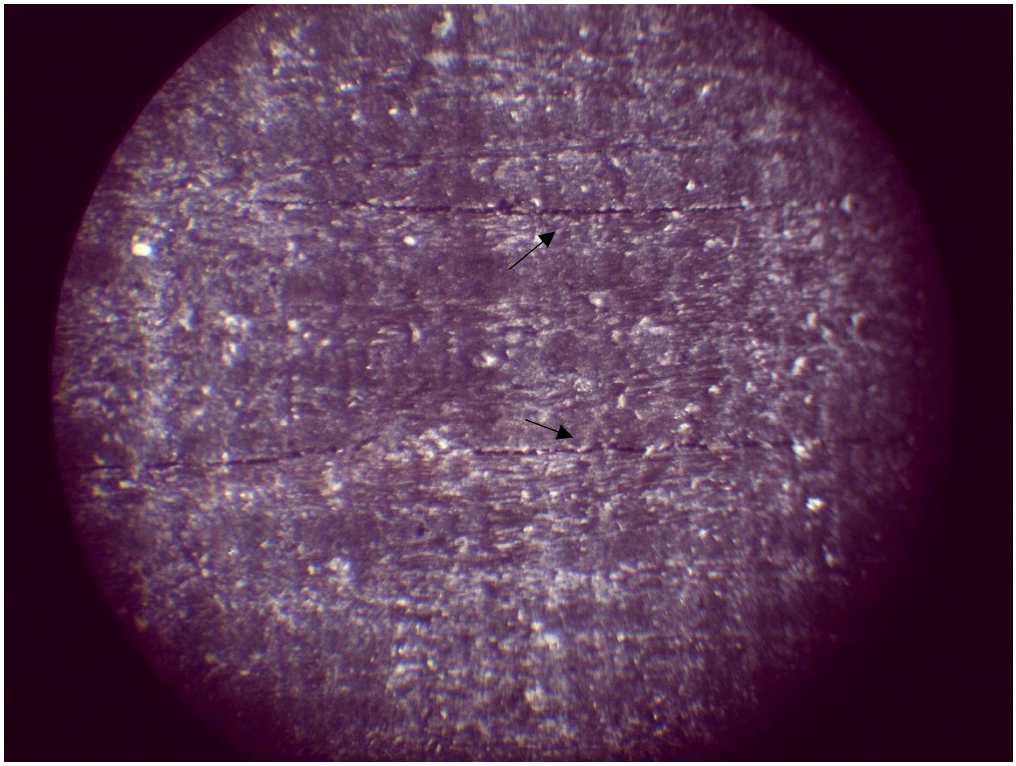

***Fig. 15**. Multiple delaminations failure mode observed for 3PB aged twill specimens.*