

Supplementary Information

Influence of the Characterization Methodology on the Repair Performance of Self-Healing Materials

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The influence of the optical profilometer on the measured volumes of the experimental samples is studied in order to ensure that it does not induce any significant variation on the results. This analysis consists of the comparison of the crack volume between the results obtained from the optical profilometer and the Field Emission Gun – Scanning Electron Microscope (FEG-SEM).

Figure S1 shows a FEG-SEM image of an induced crack with a 500 μm depth for the 2-AFD stoichiometric ($R = 1$) system doped with 0.2 wt.% CNT. The total volumes of the crack measured with the FEG-SEM and the optical profilometer are extracted on Table S1. By analyzing the results, it can be elucidated that the differences between the volume measured via optical profilometer and via FEG-SEM are very similar, with slight differences but showing almost the same order of magnitude.

Therefore, it can be concluded that the optical profilometer used to carry out the studies performed among this article does not induce any significant variation of the measured volumes.

Table S1. Length and volume measures of the characterization methods.

Characterization Method	Crack Length (mm)	Crack Volume (mm^3)
Profilometer	3.672	0.045
FEG-SEM	3.71	0.057

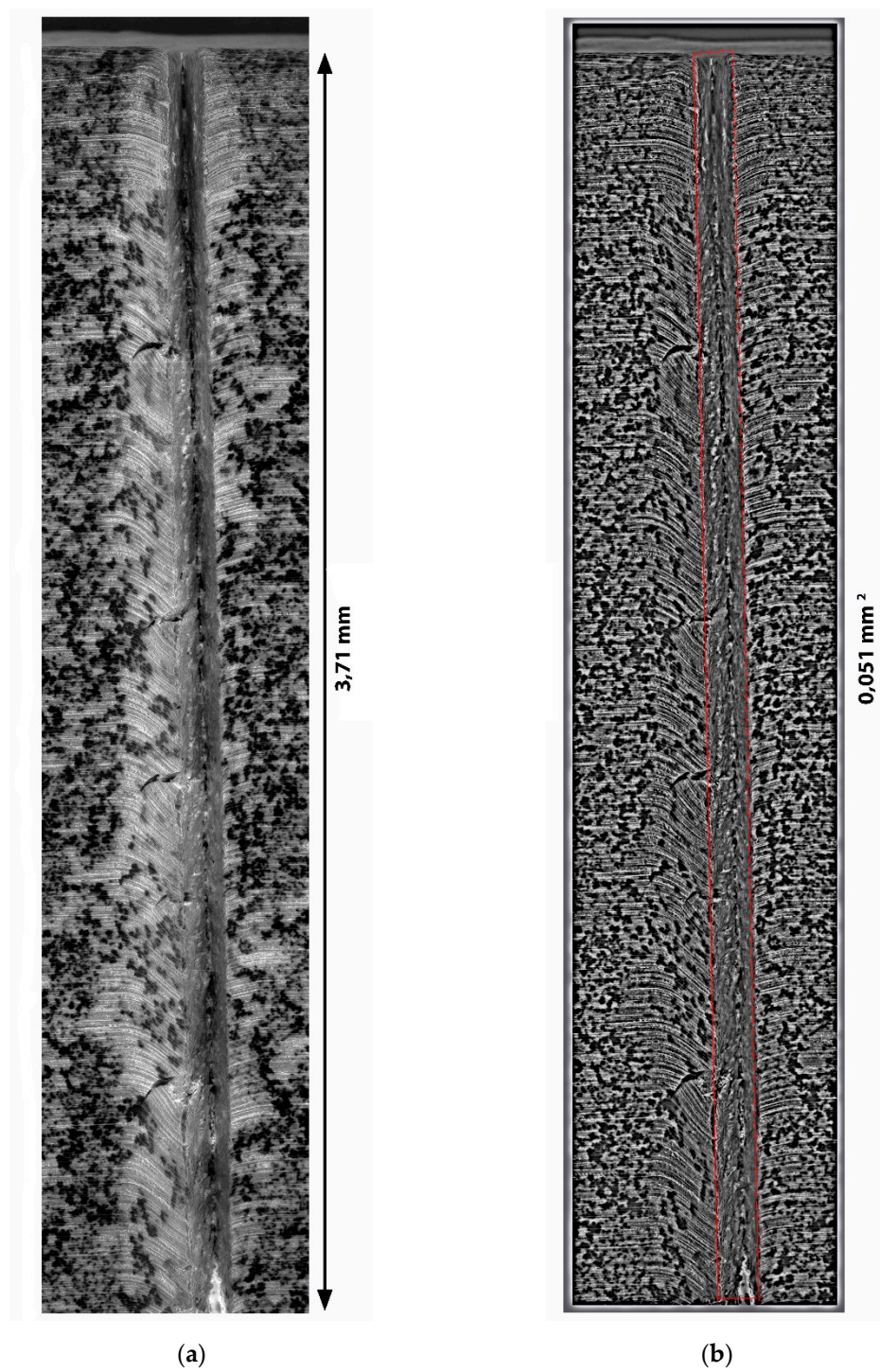


Figure S1. FEG-SEM characterization of the crack of the 2-AFD stoichiometric ($R = 1$) 0.2 wt.% CNT system with the (a) length and (b) volume measures.

Figure S2 shows the images obtained via the optical profilometer for the analysis of the influence of the crack depths. Here, it can be observed that cracks with a depth of 500 μm show a total recovery during the healing process, while the 700 μm healed crack shows no change from the original, confirming a detriment of the repair performance as already stated with the self-healing efficiency values on Table 4.

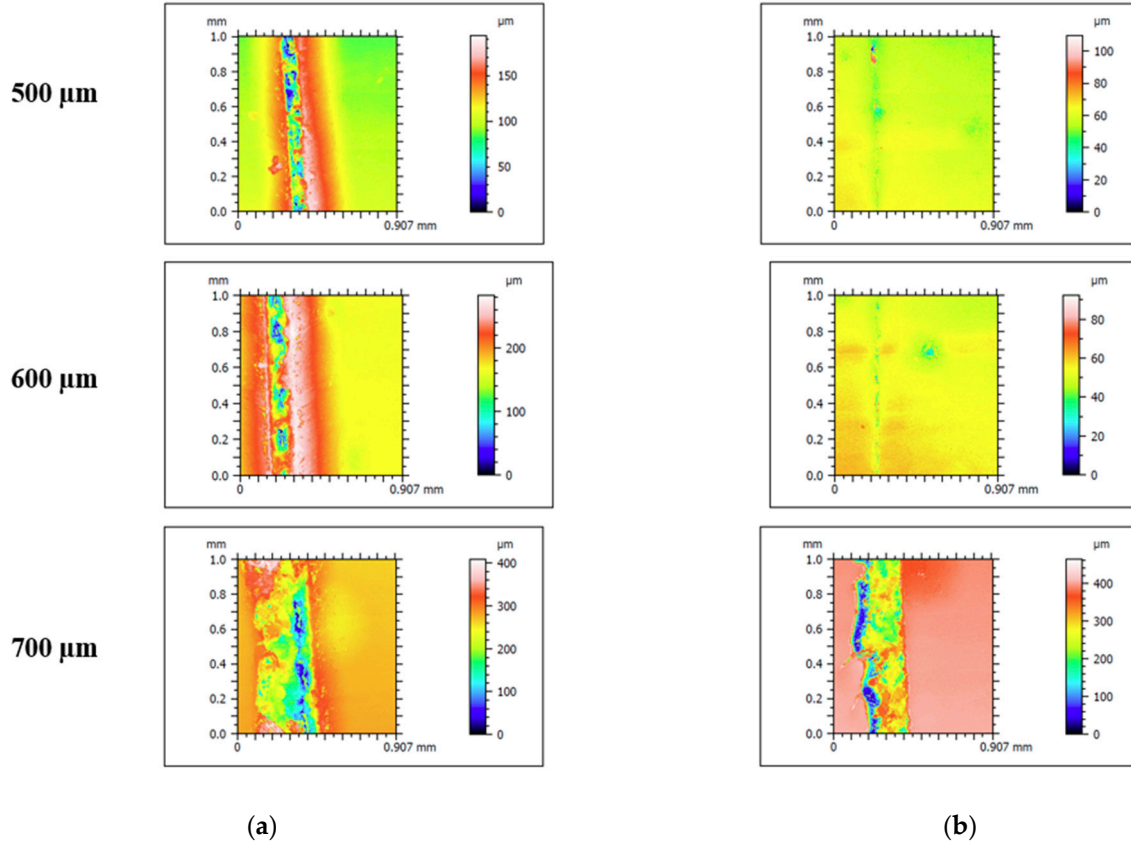


Figure S2. Characterization of the 2-AFD stoichiometric ($R = 1$) system with the optical profilometer (a) pre- and (b) post-healing.