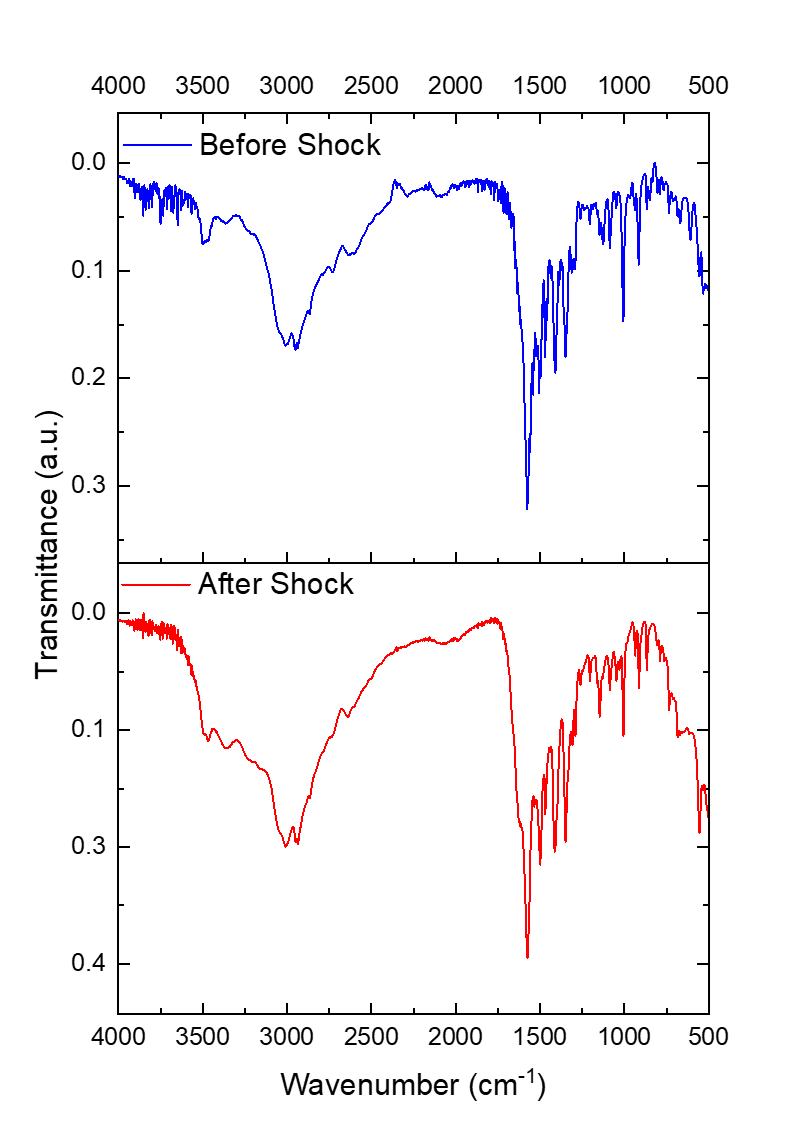
**Supplementary file #1**

**SEM**

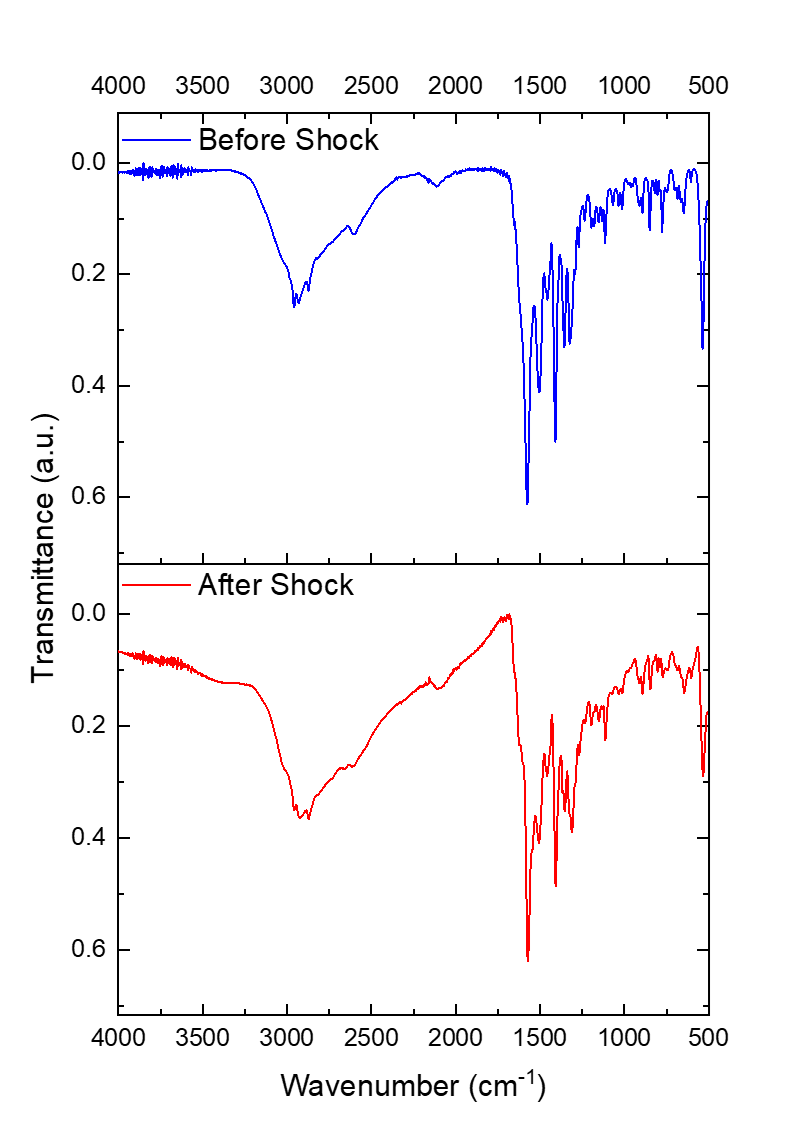
C:\Users\LHR\Desktop\SEM new data\unshocked.tifSamples were fixed on a metal stub using double sided conductive carbon tape and a gold coating was applied to the top surface to avoid surface charging. The morphology was examined using a ZEISS ULTRA 55 at an operating voltage of 5kV at different magnifications.

**Figure S1** SEM micrograph of unshocked mixture of amino acids (control) as listed in Table 1 (a) Sample1 (b) Sample 2 (c) Sample 3 (d) Sample 4, show micron size particles.

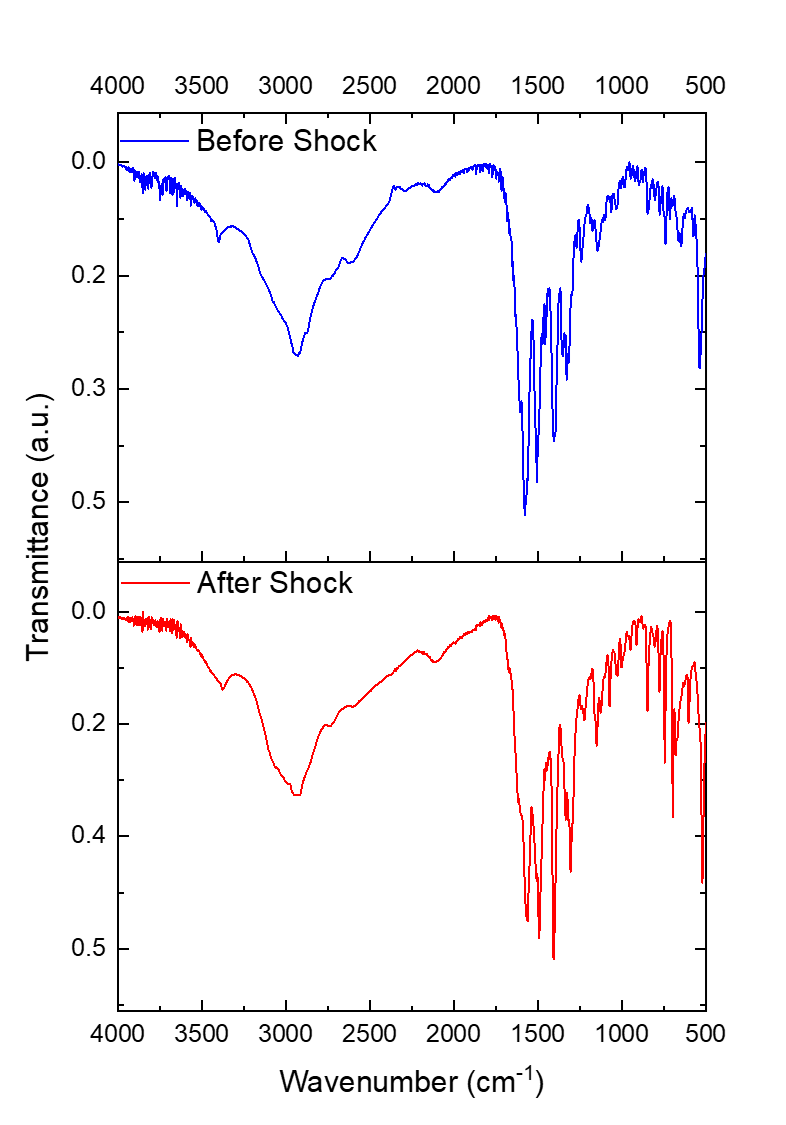
**IR spectroscopy**

All reported FT-IR spectra were obtained with a Thermo Scientific Nicolet iS50 FTIR Spectrometer in ATR mode**.**

**Figure S2** IR spectra of Sample 1 (mixture of four amino acids) before and after shock processing.



**Figure S3** IR spectra of Sample 2 (mixture of eight amino acids) before and after shock processing.



**Figure S4** IR spectra of Sample 3 (mixture of seventeen amino acids) before and after shock processing.

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**Figure S5** IR spectra of Sample 4 (mixture of twenty amino acids) before and after shock processing.