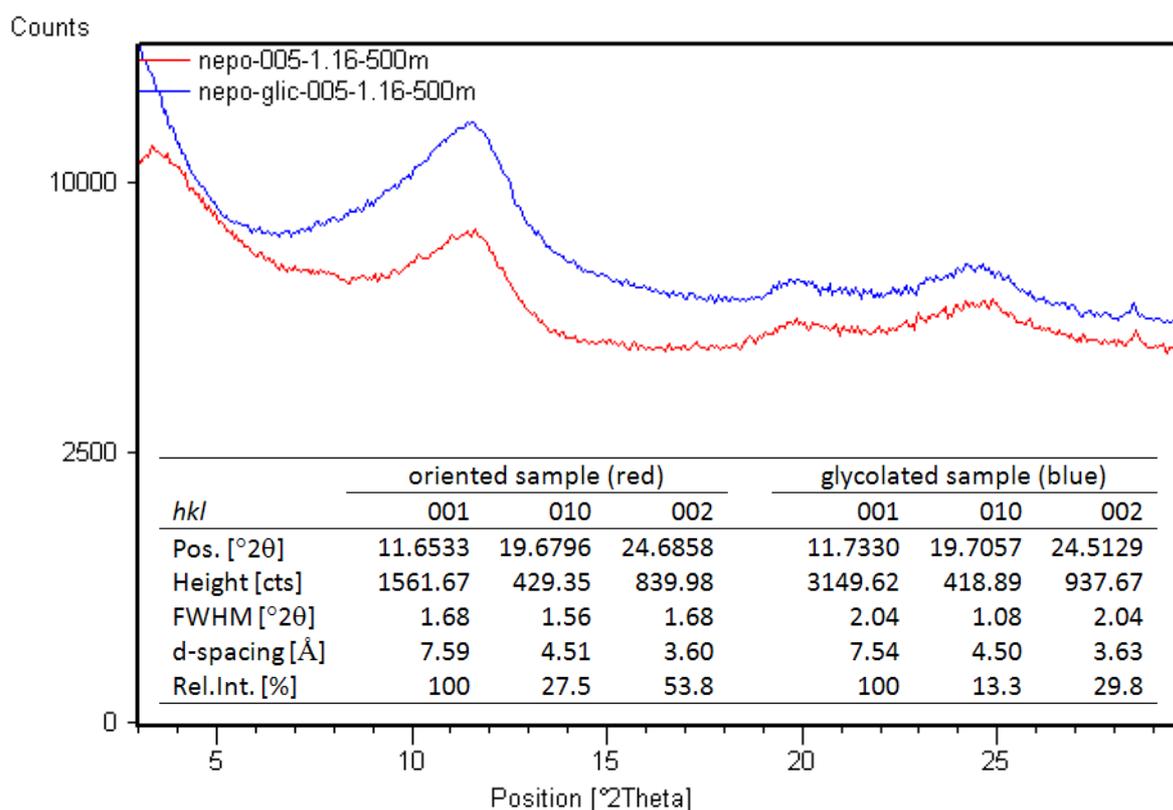


## Ethylene glycol treatment

Oriented samples of népouite were prepared from fragments of the green coating and any contaminant discernible under the stereo-microscope removed with the aid of a magnet and a needle. The powdered sample was dispersed in demineralized water and the suspension dropped on a Si 0-background holder. After the solvent was completely evaporated, XRPD patterns were collected with the PANalytical X'Pert-Pro PW3060 diffractometer (University of Milano-Bicocca). Operating conditions of the Cu tube were 40 mA and 40 kV. Data were collected in the 3-30° 2 $\theta$  region, with step size of 0.05° and counting time of 12 s per step. A duplicated of the oriented népouite mount was exposed to ethylene glycol solvation for 12 h at 60 °C and then quickly analysed using the same experimental setup. The two experimental runs are compared in Figure S1.



**Figure S1: XRPD pattern on a oriented sample of népouite between 3 and 30° 2 $\theta$  (red) and after glycolation (blue) and related peak list (inset). Neither extra peaks relating to any 10-Å or swelling phase can be detected, nor significant shift of the basal peaks can be appreciated.**