

Mineral Fibres and Asbestos Bodies in Human Lung Tissue: A Case Study

Dario Di Giuseppe ^{1,*}, Alessandro Zoboli ¹, Ruggero Vigliaturo ², Reto Gieré ^{2,3}, Maria Paola Bonasoni ⁴, Orietta Sala ¹ and Alessandro F. Gualtieri ¹

¹ Department of Chemical and Geological Sciences. The University of Modena and Reggio Emilia, Via Campi 103, I-41121 Modena, Italy; 176695@studenti.unimore.it (A.Z.); orietta2008@live.it (O.S.); alessandro.gualtieri@unimore.it (A.F.G.)

² Department of Earth and Environmental Science, The University of Pennsylvania, 240 S. 33rd Street, Hayden Hall, PA 19104-6316, USA; ruggero.vigliaturo@gmail.com (R.V.); giere@sas.upenn.edu (R.G.)

³ Center of Excellence in Environmental Toxicology, University of Pennsylvania, 1316 Biomedical Research Building (BRB) II/III, 421 Curie Boulevard, Philadelphia, PA 19104, USA

⁴ Pathology Unit, Azienda Unità Sanitaria Locale IRCCS, I-42123 Reggio Emilia, Italy; paolabonasoni@yahoo.it

* Correspondence: dario.digiuseppe@unimore.it; Tel.: +3905-9205-8497

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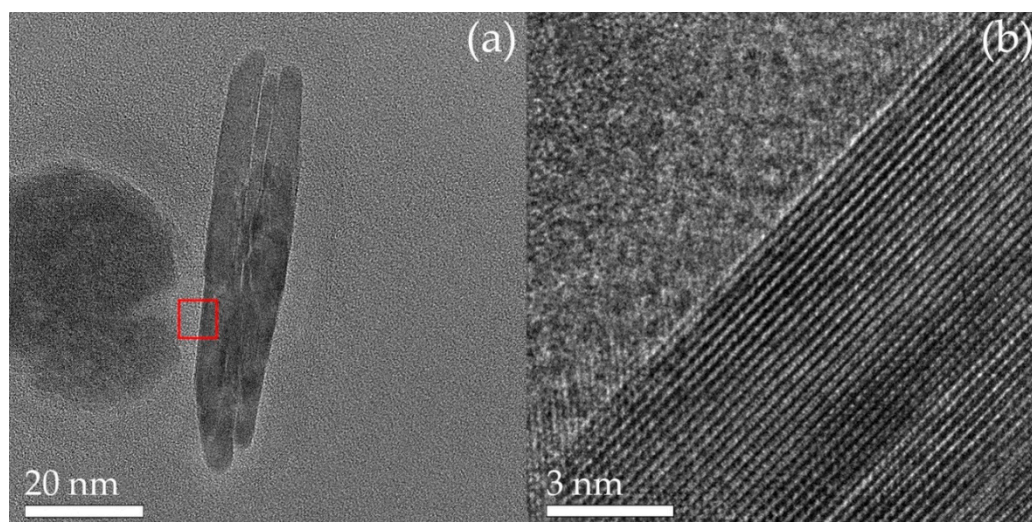


Figure S1. Results of the stability test carried out on a mineral particle during an TEM investigation. Stability tests were performed by observing the same ROI for 2 min. After 2 min under the electron beam of the microscope, the crystalline structure of the mineral particle remains unaltered, and there is no formation of an amorphous phase at the particle edges. (a) Whole picture of the mineral particle. (b) HRTEM image of the mineral particle after 2 min under the electron beam, showing a highly crystalline structure (red square is the ROI).

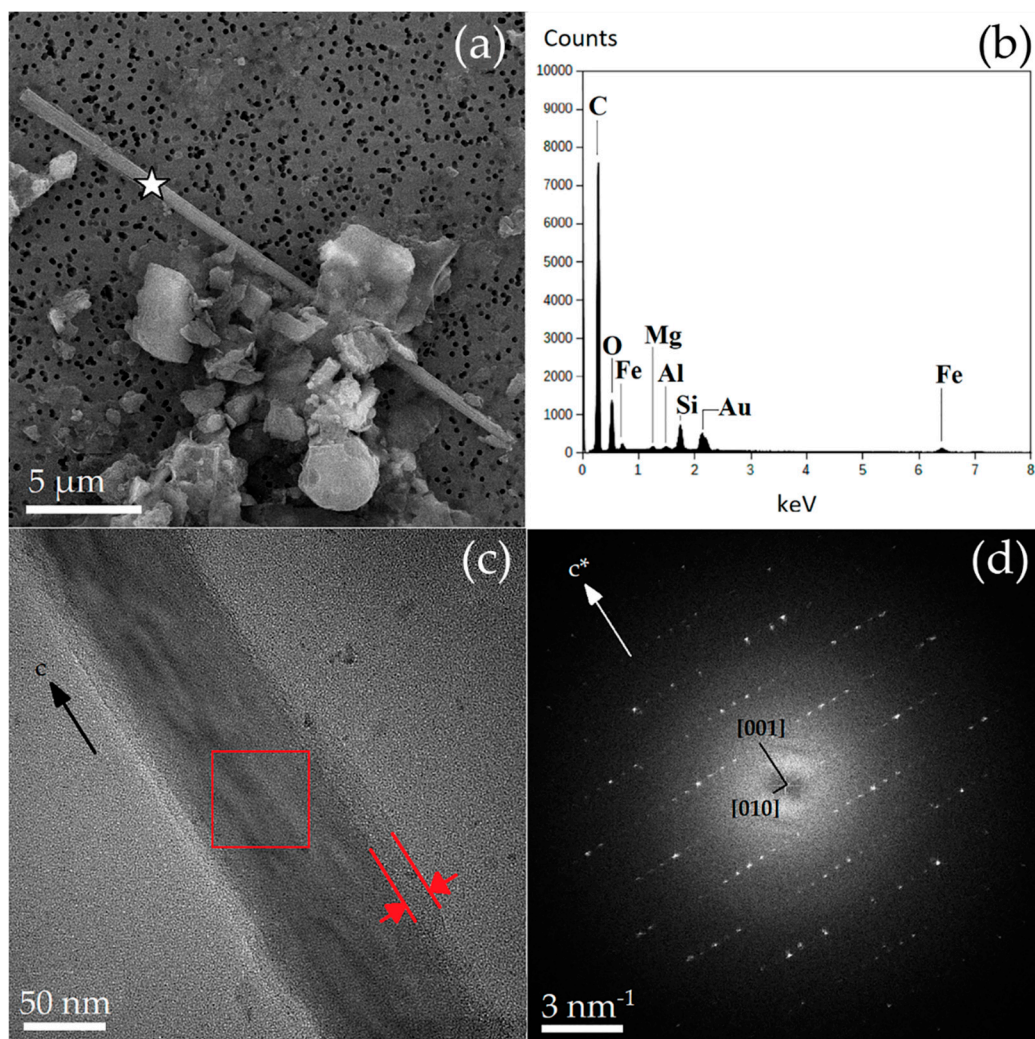


Figure S2. (a) SEM image of non-coated amosite fibre found in the lung tissue of the male subject. SEM image was acquired using the signal of secondary electrons. Fibre is surrounded by residues of incomplete ashing. (b) SEM-EDX spot analysis (white star) of amosite shown in Figure S2a. (c) HRTEM micrograph of an individual non-coated crocidolite fibre found in the lung tissue of the male subject. Crocidolite fibre exhibits a thin amorphous layer on its surface. Red arrows and red lines highlight the amorphous layer. (d) FFT pattern extracted from HRTEM image shown in S2c, where the red square represents the region of interest. The d-spacings (Å) and the angle determined from the pattern are: $[010] = 17.8 \text{ Å}$, $[001] = 5.3 \text{ Å}$, and $\alpha = 90^\circ$. Calculated cell parameters are consistent with the data for the South-African crocidolite (RRUFF ID = R060028) [39].

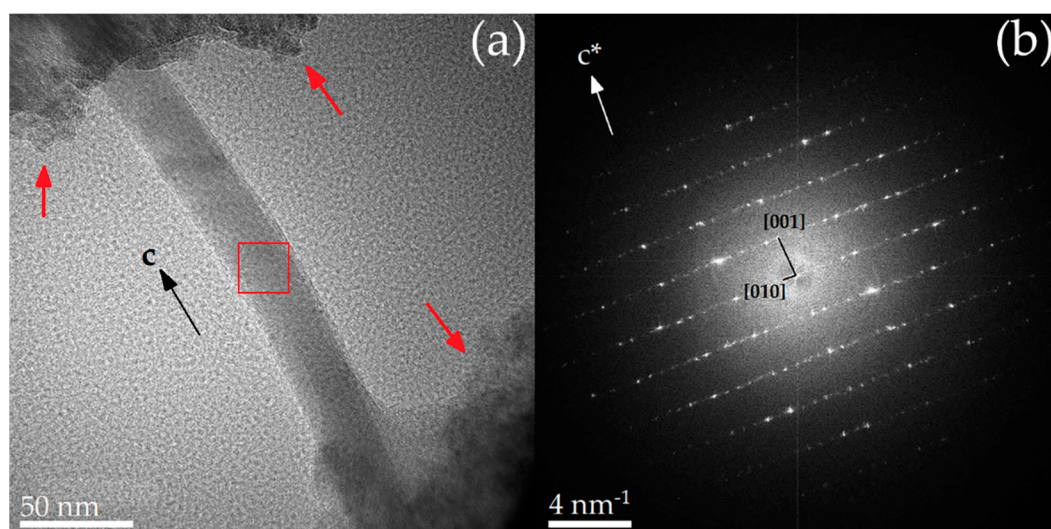


Figure S3. (a) HRTEM micrograph of partially-coated crocidolite fibre found in the lung tissue of the male subject. Red arrows highlight the ABs segments (b) FFT pattern of the crocidolite fibre shown in Figure S3a, where the red square is the region of interest. The d-spacings (Å) and the angle determined from the pattern are: $[010] = 17.7 \text{ Å}$, $[001] = 5.3 \text{ Å}$, and $\alpha = 90^\circ$.