Assessment of manufacturing processes and materials characterization in a collection of ancient Chinese Jades

Roberto Giustetto[1,2,3]*, Giulia Berruto[1], Nadia Curetti[1], Davide Bernasconi[1], Giorgia Straface[4], Giusi Sorrentino[4,5], Laura Guidorzi[4], Alessandro Lo Giudice[3,4], Tommaso Poli[6], Gabriele Vellano[6], Benedetta Vitale[6], Eliano Diana[6].

[1]Department of Earth Sciences, University of Turin, via Valperga Caluso 35, Torino (Italy)
[2]NIS (Nanomaterials for Industry and Sustainability) Centre, via Quarello 11, Torino (Italy)
[3]INFN (National Institute of Nuclear Physics), via P. Giuria 5, Torino (Italy)
[4]Department of Physics, University of Turin, via P. Giuria 1, Torino (Italy)
[5]Department of Environmental Sciences, Informatics and Statistics, Ca' Foscari University of Venice, Via Torino 155, 30172 Mestre, Venezia (Italy)
[6]Department of Chemistry, University of Turin, via P. Giuria 7, 10125 Torino (Italy)

*Corresponding author: roberto.giustetto@unito.it

Supplementary Material

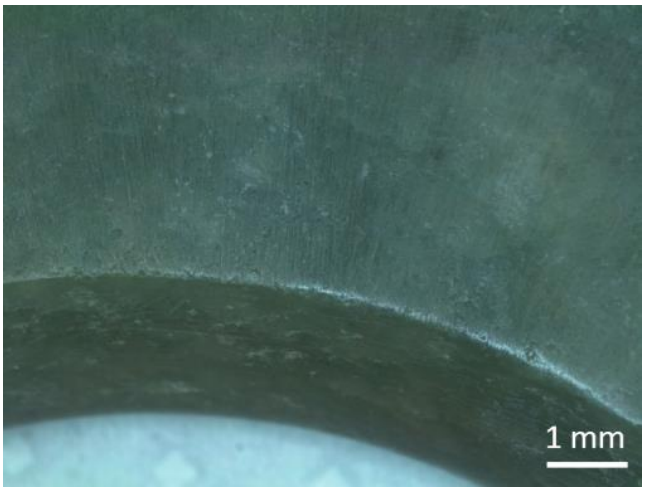

Figure S1. *Micrograph of the Cp/9 bi ring surface, showing fine finishing traces smoothing the ring border in limited areas. Circular striations are also visible on the inner side of the hole.*

Figure S2. *Micrograph of the openwork decoration and handcrafting marks on the Cp/16 dragon/feline plaque.*

Figure S3. *Micrographs of the Cp/18 spiral-shaped ornament: a) detail of the inner side of an openwork decoration, with striations (barely visible) parallel to the edge; b) and c) irregularities in the pattern of carved decorations.*

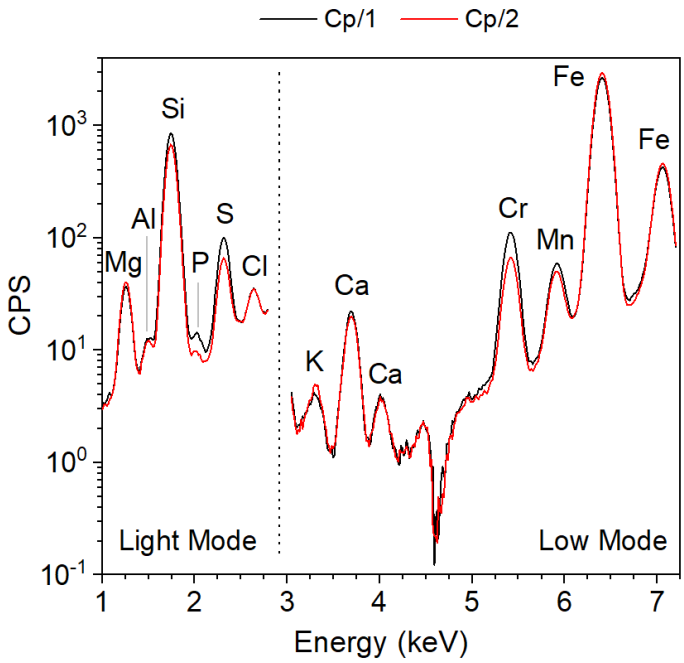

Figure S4. *Average XRF spectra in light and low mode of sample CP/1 and CP/2. Peaks without labels are instrumental. Due to the type of measurement, the peaks between light and low modes cannot be compared in absolute height.*

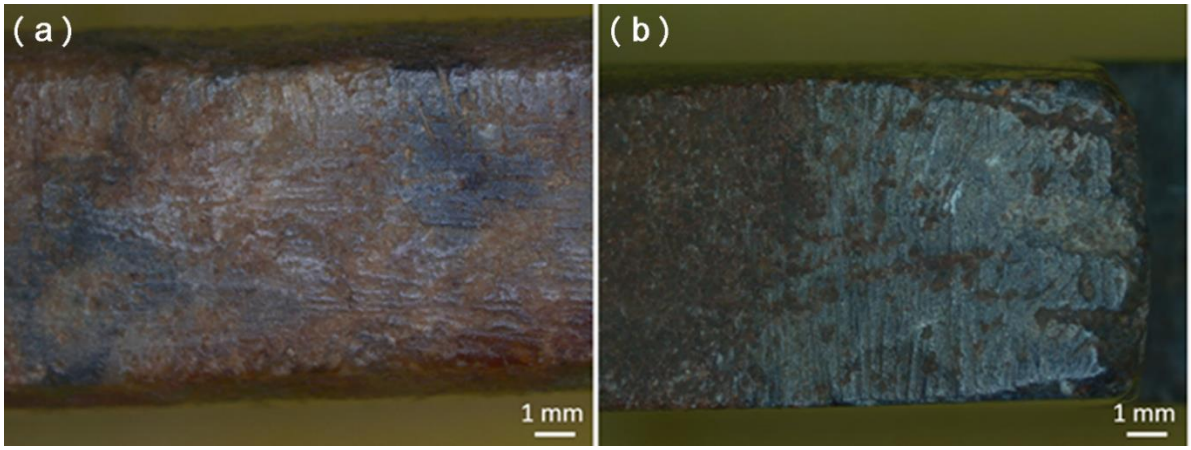

Figure S5. *Cp/1 and Cp/2 zhang axe-heads: a) and b) micrographs of the lateral sides, where clear crafting marks and rounded edges are visible.*

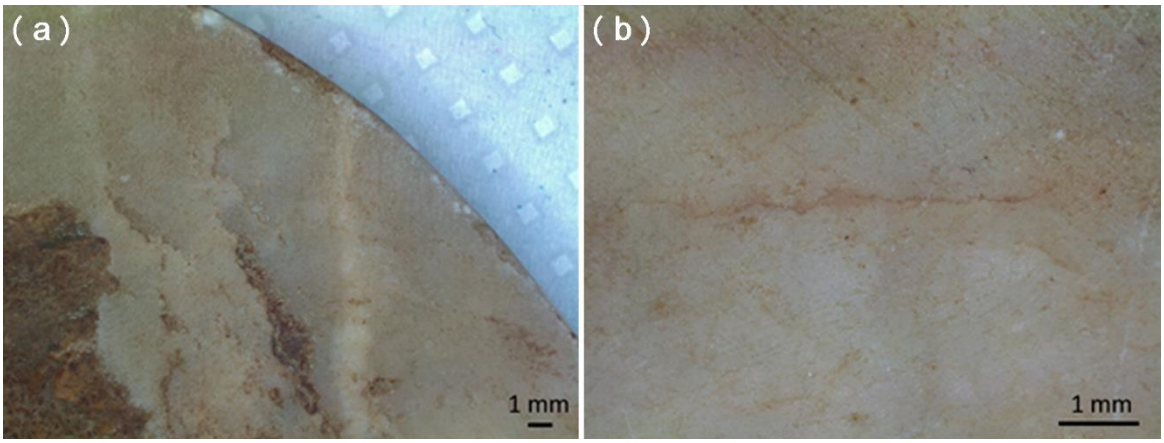

Figure S6. *Cp/7 bi ring: a) chipping along the edge, possibly due to post-depositional processes; b) Detail of the artefact surface, where groups of striations with different orientations are visible.*