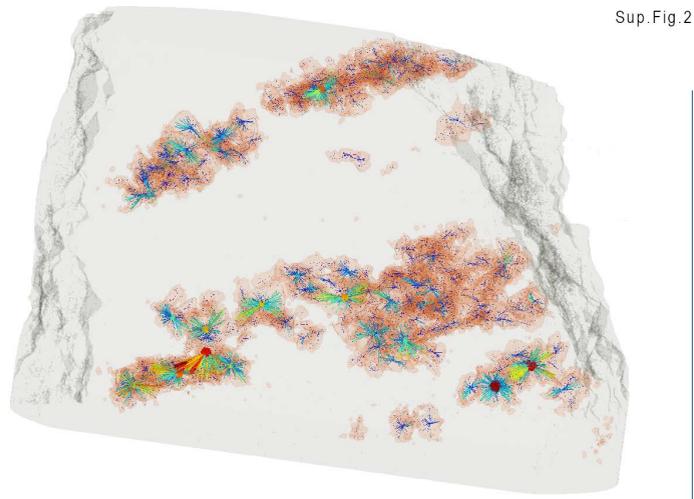
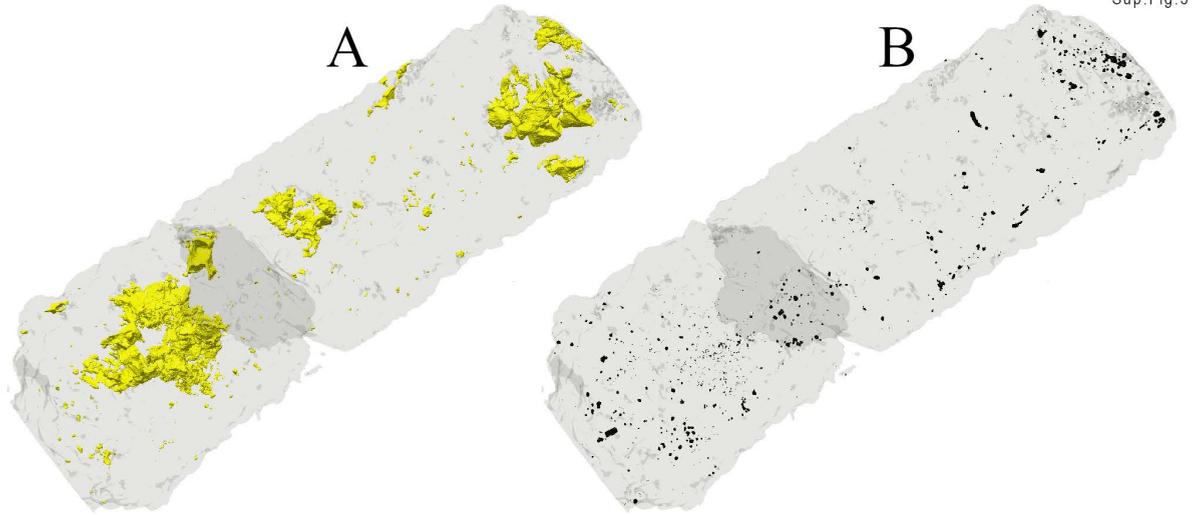


SUPPLEMENTARY FIGURE 1. Graph showing Mean intensity vs. Aspect ratio for the high intensity volumes segmented from the three xenoliths. Data obtained through connected components analysis at step A (see Supplementary Table 1).

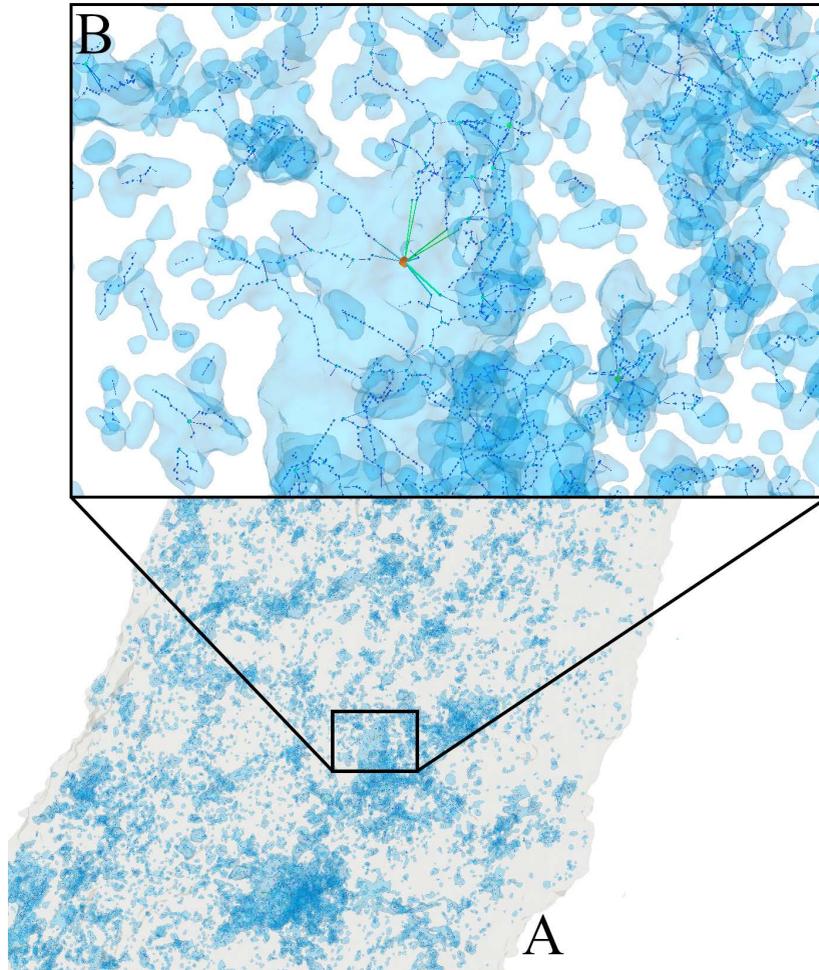


SUPPLEMENTARY FIGURE 2: 3D model obtained at step B for mantle xenolith MG10x. Silicates in light gray, spinel in light orange. Skeleton analysis is visible inside spinel, with color spectrum ranging from blue (lowest connectivity) to red (highest connectivity). The radius of vertices reflects their connectivity and the edge radius reflects the Euclidean length of edges.



SUPPLEMENTARY FIGURE 3: 3D model obtained at step A for mantle xenolith Bi4. Silicates in light gray. Here is the subdivision of high-intensity ROI into (a) low Volume/Surface ratio (in yellow); (b) high Volume/Surface ratio (in black). Notice how yellow highlighted volumes match spinel of Figure 5a.

Sup.Fig.4



SUPPLEMENTARY FIGURE 4: (a) 3D model obtained at step A for mantle xenolith FN38. Glass in light blue, silicates in light gray. (b) Inset showing skeleton analysis inside glasses, with color spectrum ranging from blue (lowest connectivity) to red (highest connectivity). Radius of vertices reflecting their connectivity and edge radius reflecting Euclidean length of edges.