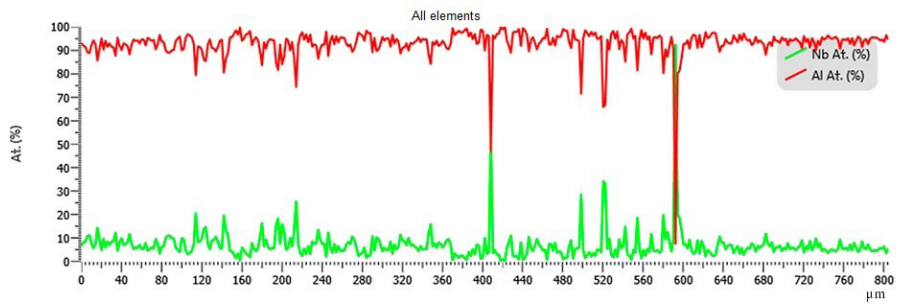
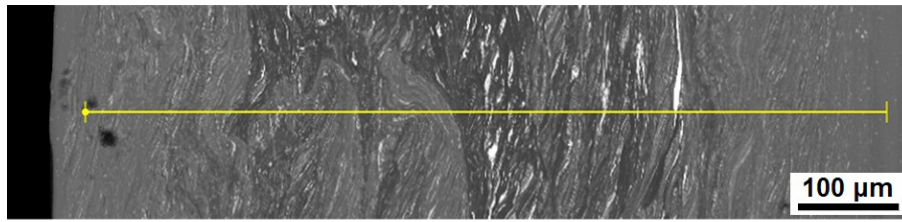
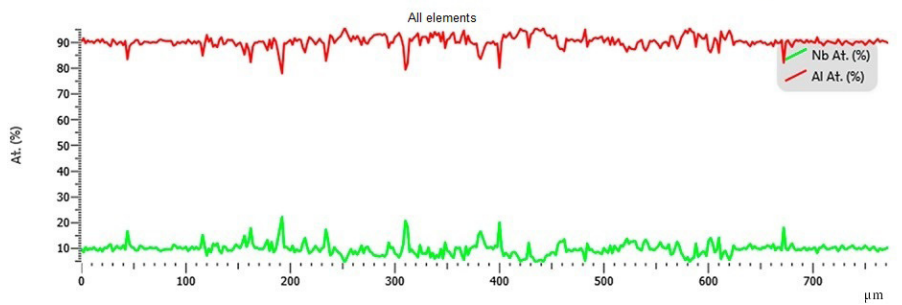
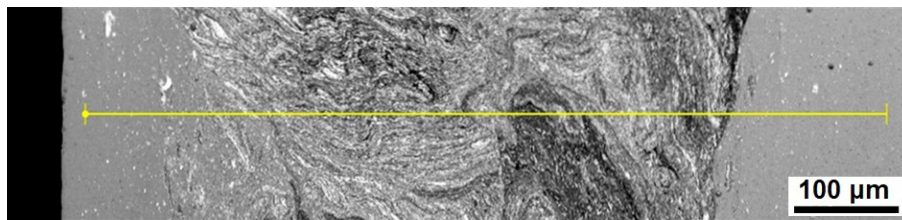


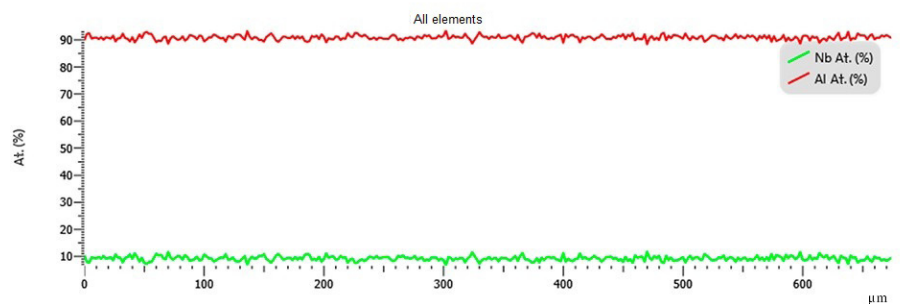
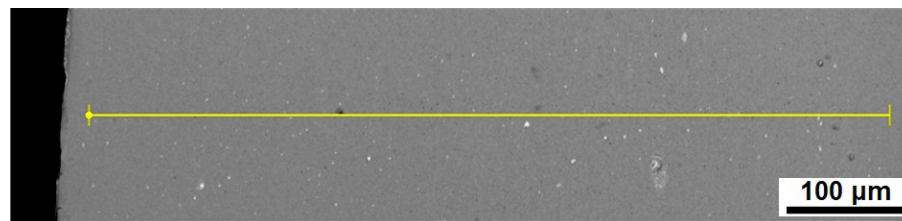
Supplementary material



a



b



c

Fig. S1. (Color online) EDX analysis along the yellow line depicted on micrograph in different areas of Al-Nb composite: center (a), mid-radius (b), peripheral area (c).

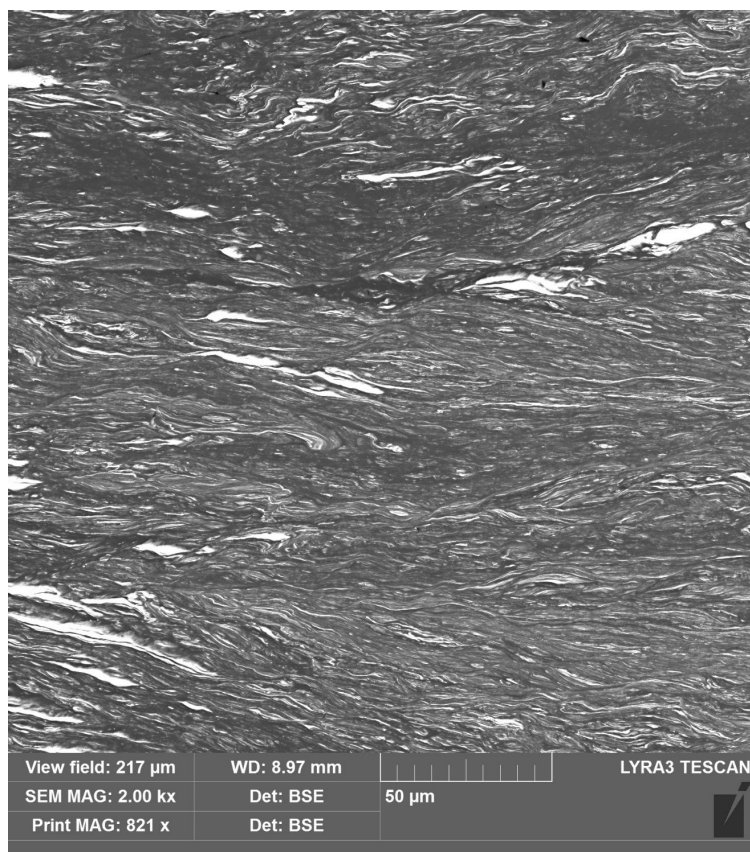


Fig. S2. Nanolaminated structure in Al-Nb composite close to the mid-radius area.

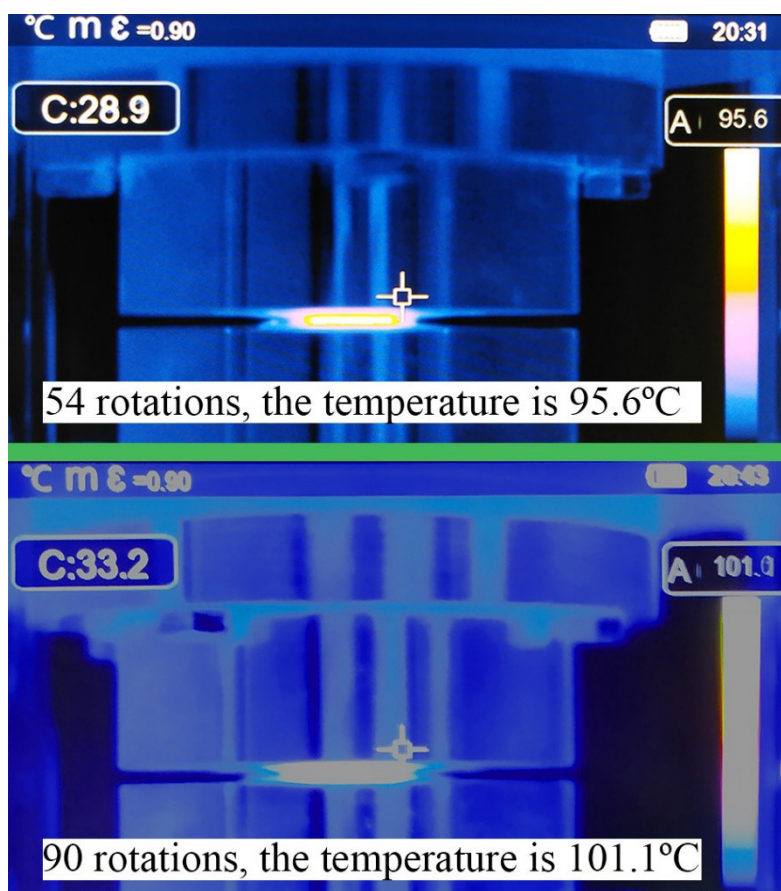


Fig. S3. (Color online) Temperature measurements during HPT processing by THT600H Infrared camera with 384 × 288 pxl resolution and measuring range $-20^{\circ}\text{C} \div 1200^{\circ}\text{C}$.

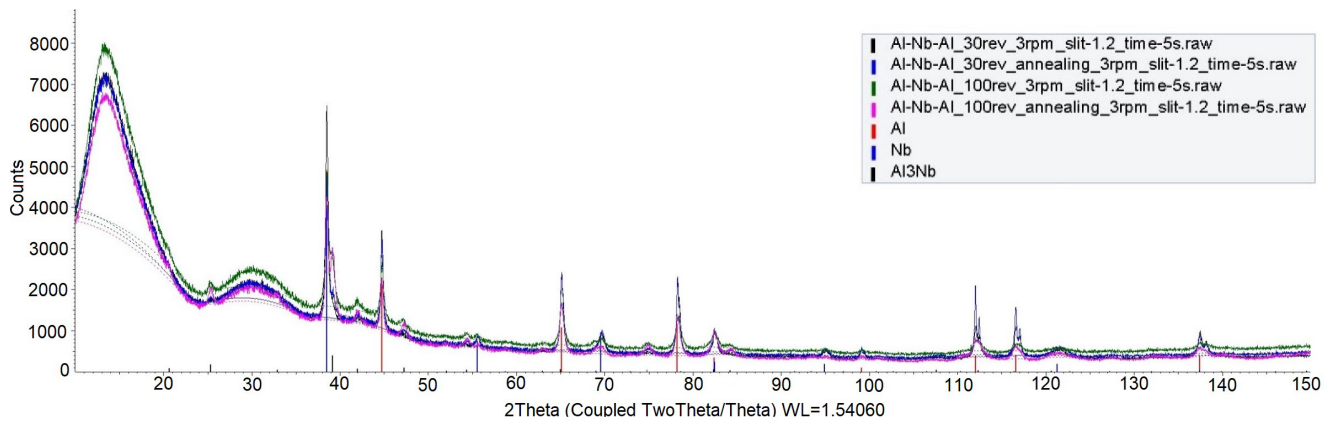


Fig. S4. (Color online) XRD profiles of Al-Nb composites.

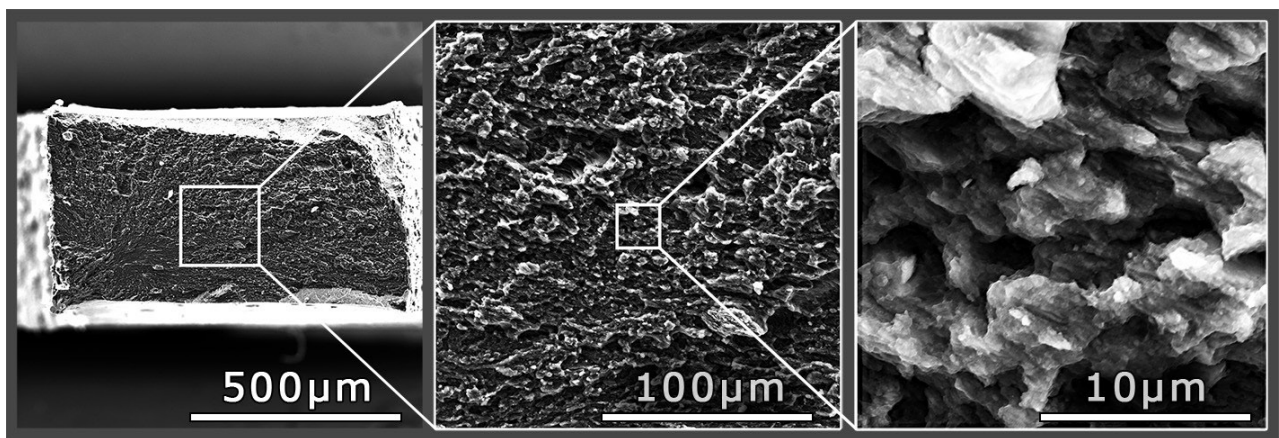


Fig. S5. Fracture of HPT Al-Nb ($n=100$, $T=400^{\circ}\text{C}$) sample.