

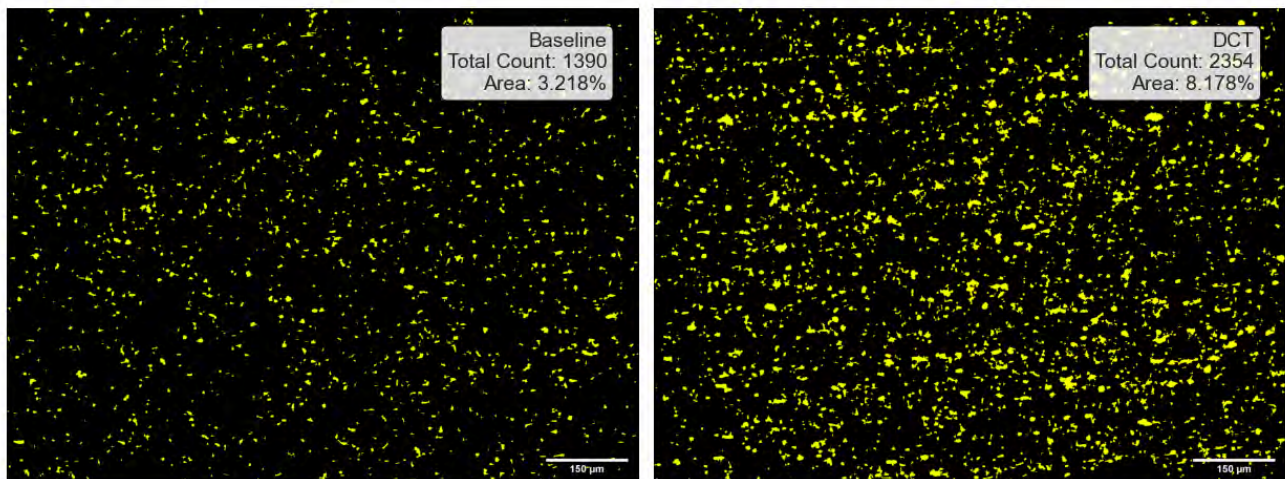


Breakthrough Mining Steel Improvement - Deep Cryogenic Treatment (DCT) increases wear resistant carbides by 69% in oil-quenched steel.

A new cold thermal treatment developed by Deep Cryogenics International (www.deepcryogenics.com) dramatically increases the wear life and work hardening potential of mining grade TRIP steels.

Segmented coupon samples etched with Nital show a 69.35% increase in carbide precipitation: 2,354 post-DCT versus 1,390 in baseline.

Unlike surface coatings or many heat treatments, DCT is a through-core, diffusion-less process that doesn't wear out or reverse over time. It can extend the life of crusher cones, bucket teeth, shovel liners and gears.



Etched micrographs (100x) of carbide precipitation in baseline (left) and after DCT (right)

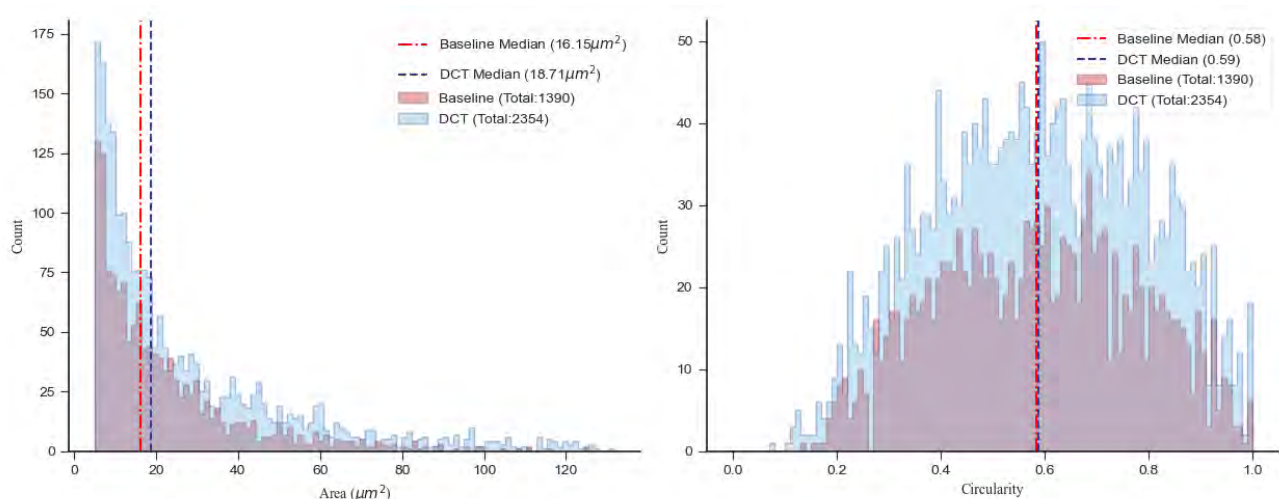


Figure 2: Area (left) and Circularity (right) distributions on both samples