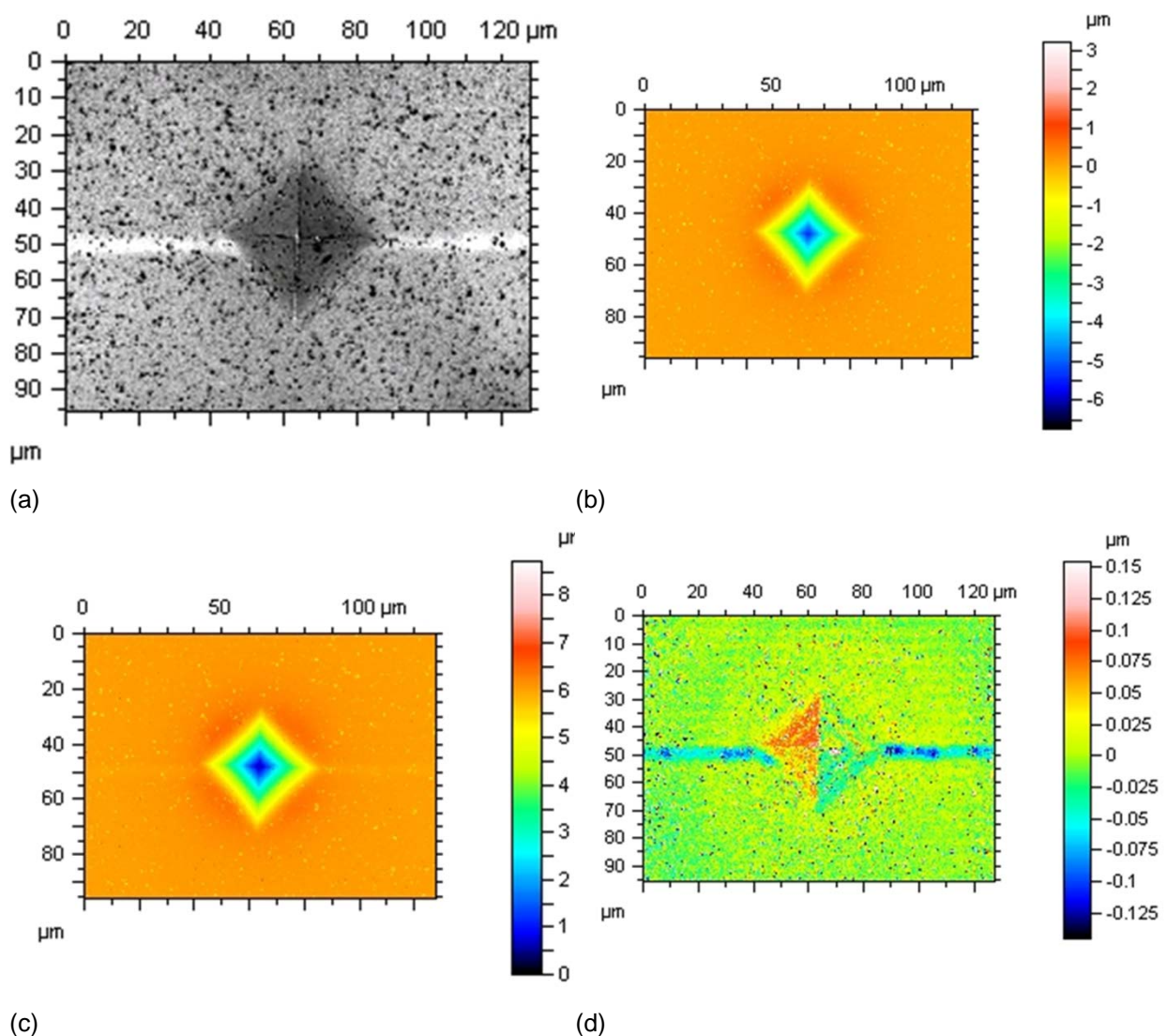
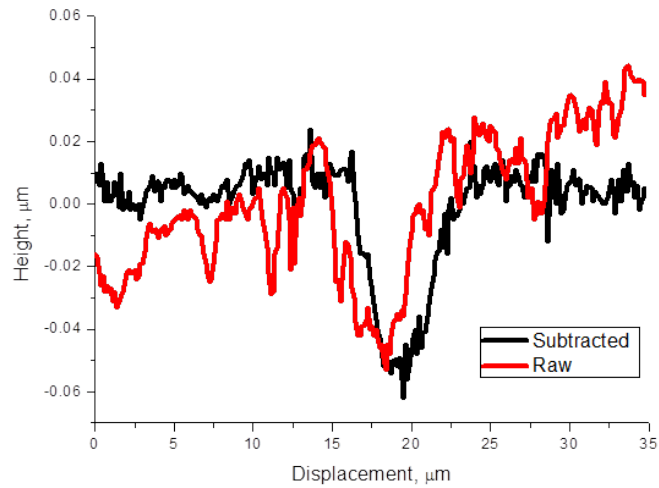


Optical Relocation Profilometry

NPL has carried out a series of relocation profilometry experiments using their microtribology test rig. An important addition to the test system was a kinetic mount arrangement to allow for rapid accurate relocation of the sample in the test system (see figure below). Another key aspect was the development of a procedure to mark samples with Vickers indentations and then using these as signposts to aid relocation with the microtribometer. The overall process is then to measure the surface before the tribological test, carry out the tribological test, and measure the surface after the test. The comparison and analysis of the surface topography measured before and after the test then yields measurements of surface damage with much improved precision and accuracy compared with conventional post-test measurements.





(e)

Analysis of microtribometer scratch on Hybrid DLC coated sample: (a) image of scratched sample; (b) height map before scratching; (c) height map after scratching; (d) registered and subtracted height map; and (e) comparison of averaged profiles direct from after scratch height map and registered and subtracted height map.