The Permanent Print?

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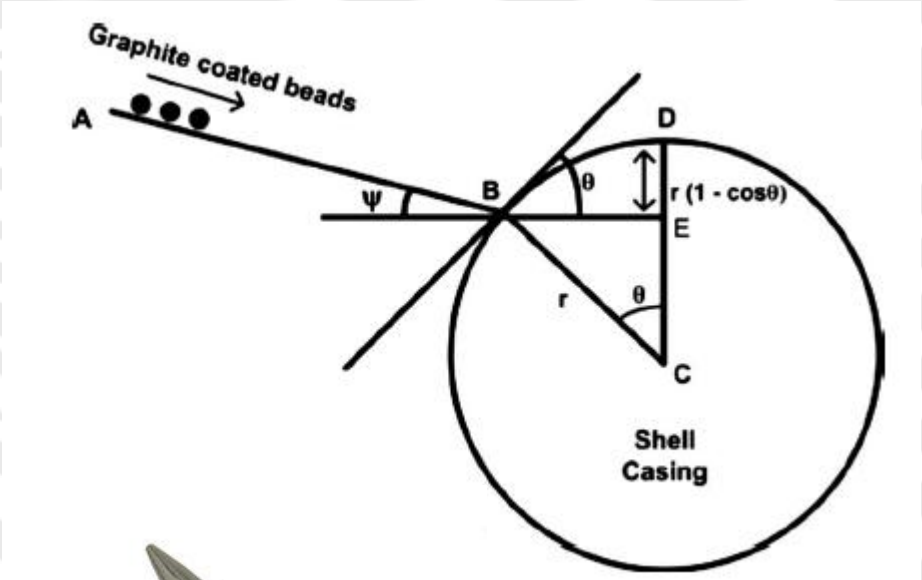
With Dr Gavin Bell, Dr John Bond and TJ Petty

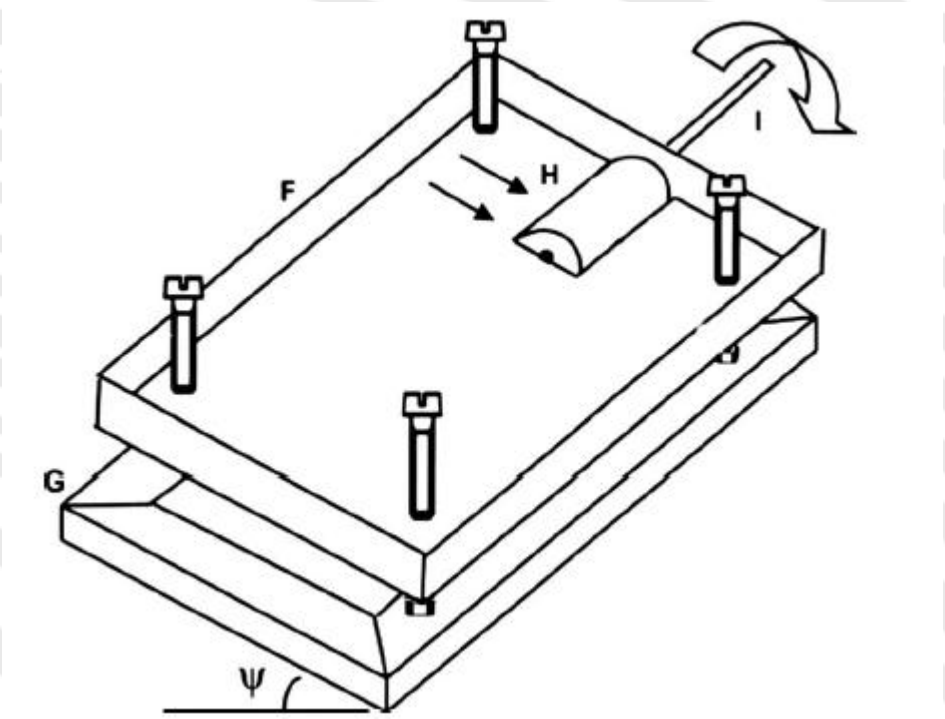
Technique Developed by John Bond

- Potential of 2.5 kV applied to the shell casing.
- Beads of silica coated in graphite (diameter≈500 μm) become charged when rolling down slope.
- Silica beads electrically attracted to shell casing.



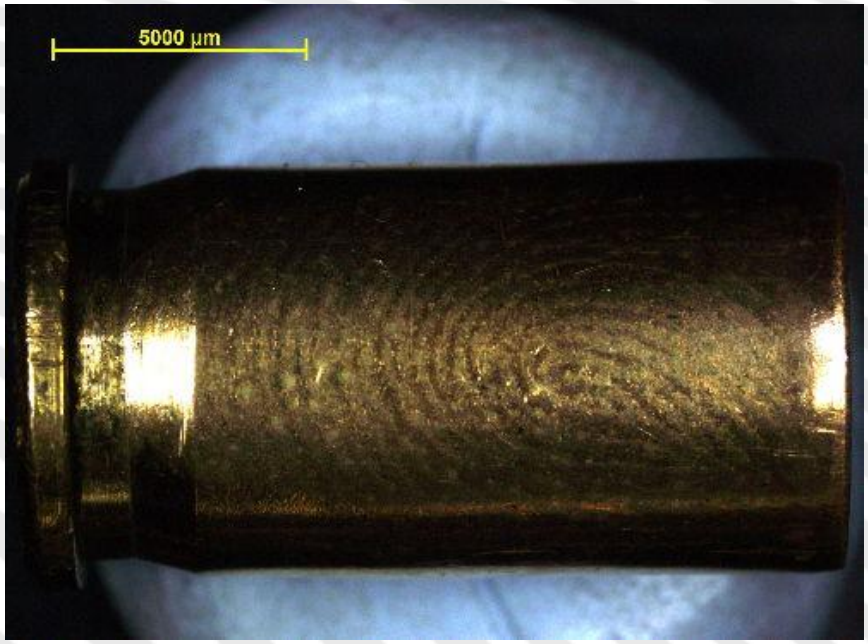
Technique Developed by John Bond

- Graphite coating adheres to the ridges of the fingerprint.
- One of Time Magazines Best Inventions of 2008
- Has helped solve many “cold cases”



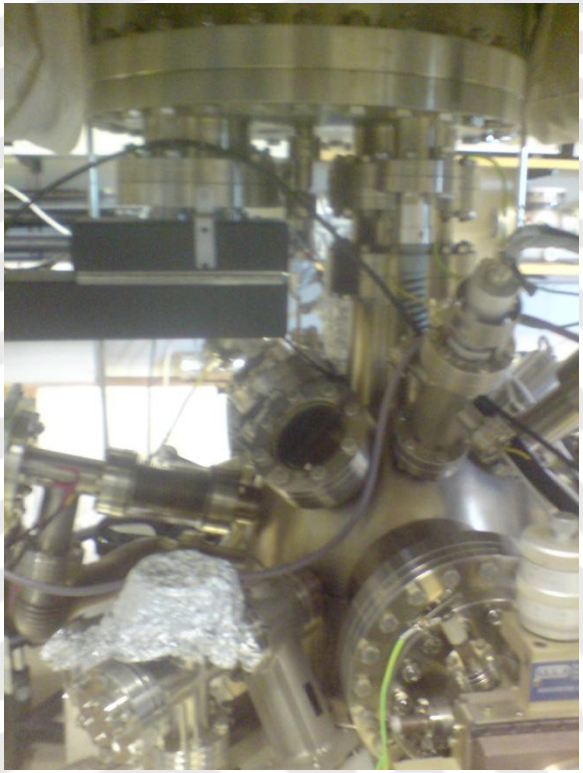
Enhancement/Cleaning Techniques

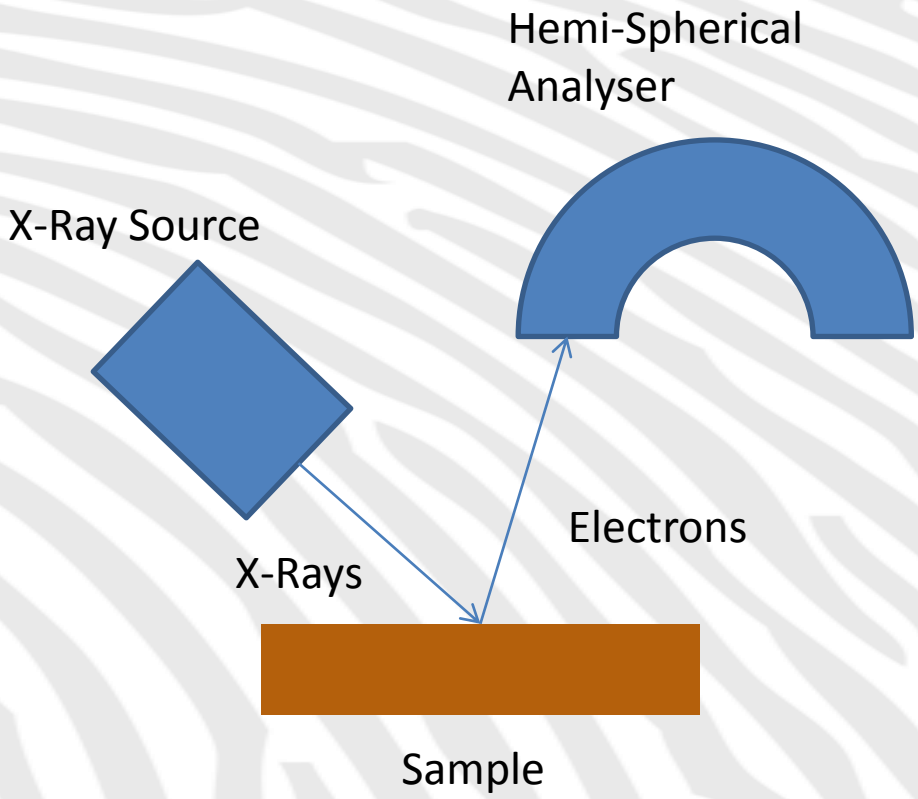
- Plasma Cleaning
- Soapy Water Wash
- Sonication
- Annealing in Air



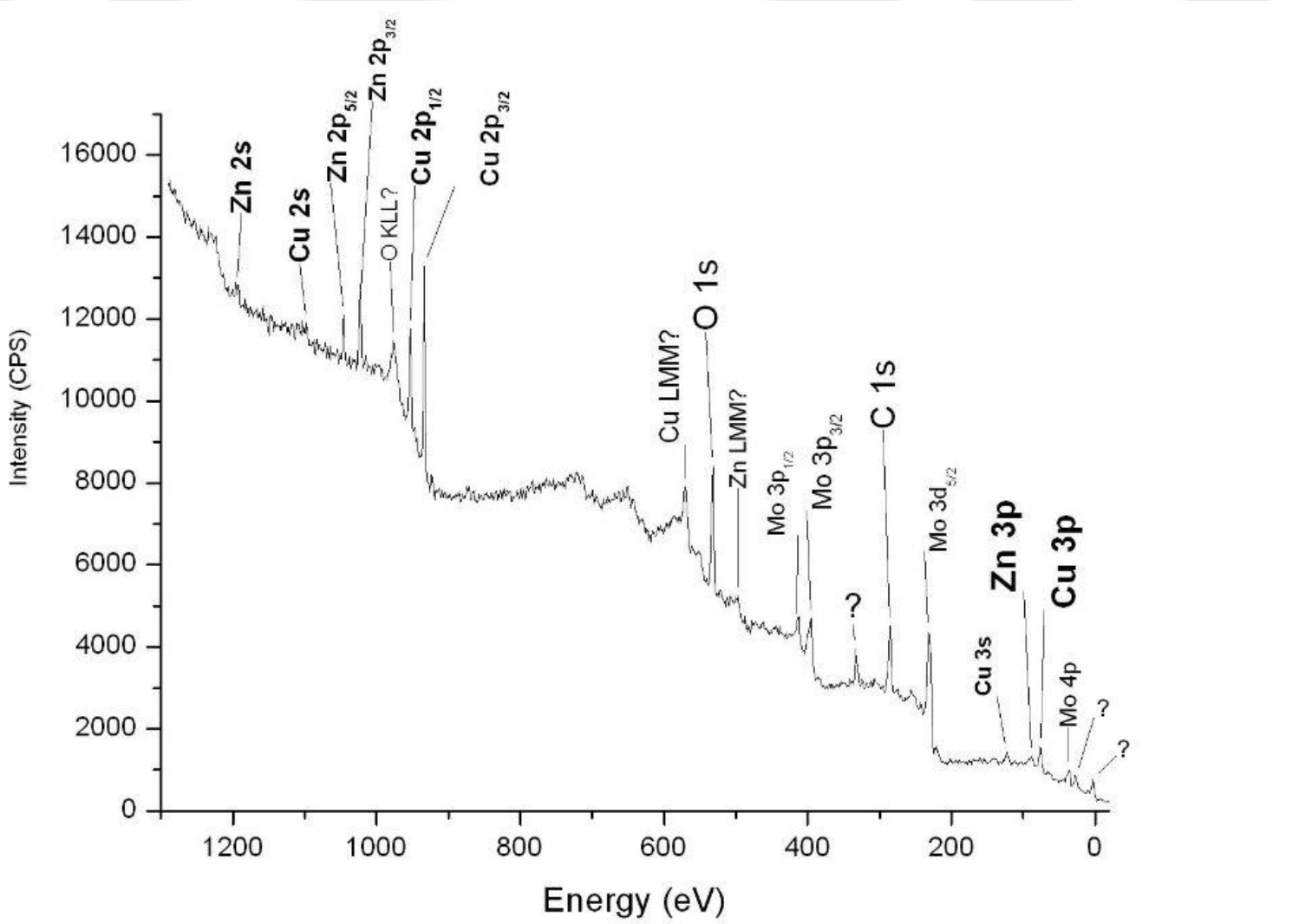
Surface Analysis I: XPS

- XPS (X-ray Photoelectron Spectroscopy)

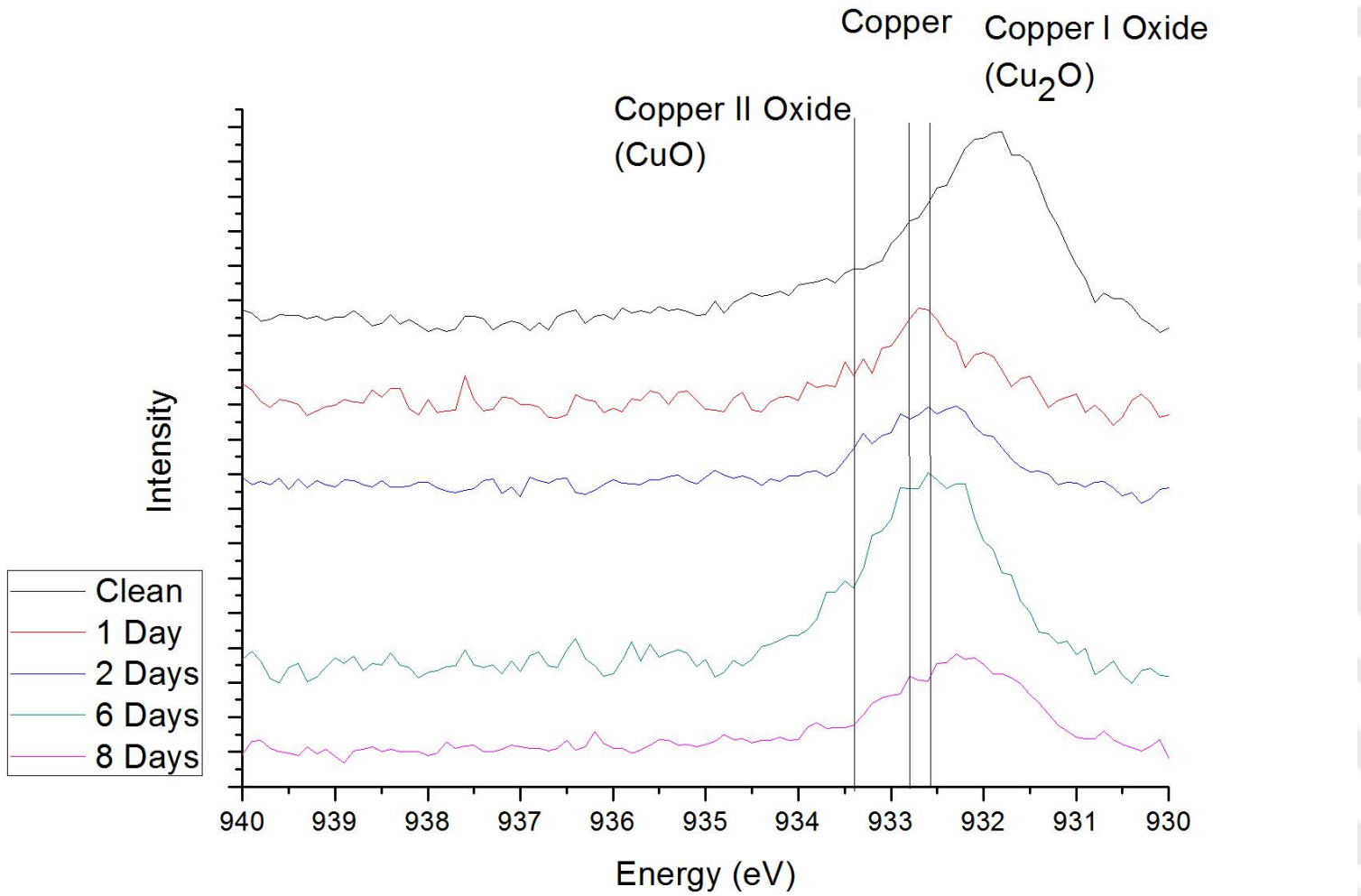




Surface Analysis I: XPS Clean Brass



Surface Analysis I: XPS Cu $2p_{3/2}$



Surface Analysis II: SEM/CL

- SEM-Cl (Scanning Electron Microscope Cathodoluminescence)

Surface Analysis II: SEM/CL