

Use of spectroscopic and impedance techniques to monitor the cumulative damage caused by indoor environmental factors on organ pipes

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PART B

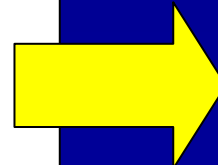
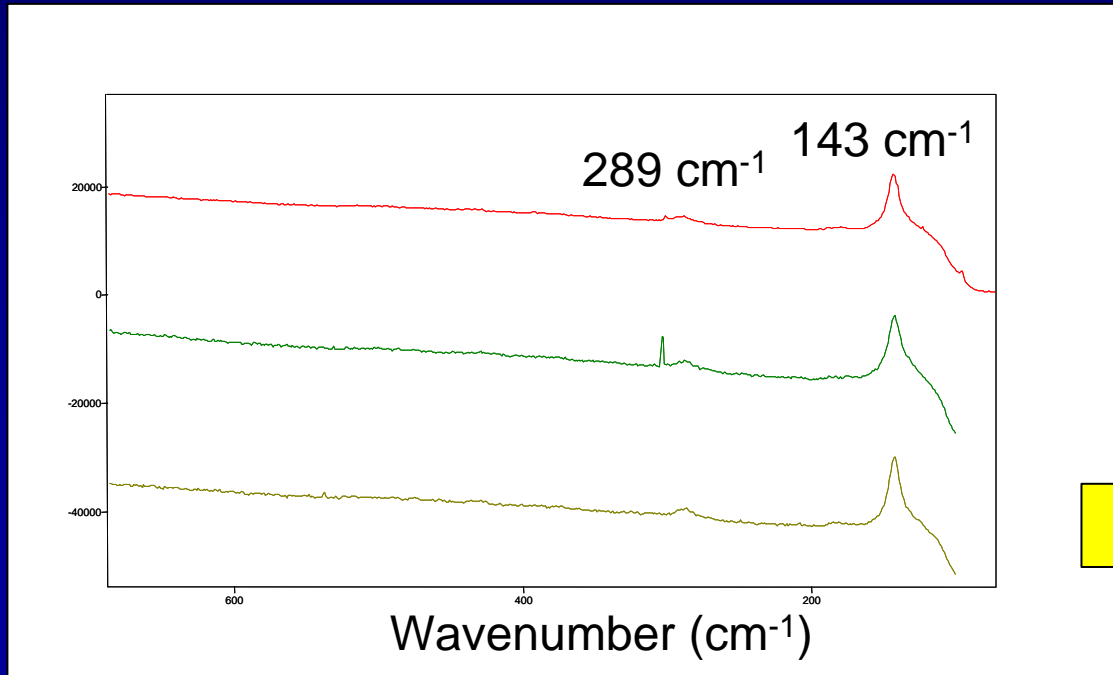
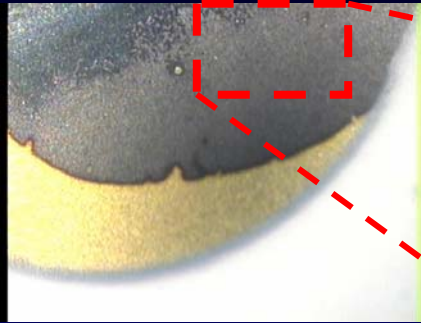
RAMAN SPECTROSCOPY AND IMPEDANCE ANALYSIS ASSESSMENT

RAMAN SPECTROSCOPY

- **AT THE SAME TIME, PROVIDES STRUCTURAL INFORMATION AND IS NON-DESTRUCTIVE**
- **THE ACTUAL SAMPLED SPOT (1-2 μm) ON A SURFACE CAN BE VISUALISED THROUGH A MICROSCOPE**
- **INFORMATION ON ORGANIC AND INORGANIC SUBSTANCES**
- **LIKE FTIR, IT IS A VIBRATIONAL SPECTROSCOPIC TECHNIQUES, BUT HAS DIFFERENT SELECTION RULES (SIMPLER SPECTRA, MORE PRECISELY DEFINED BANDS)**

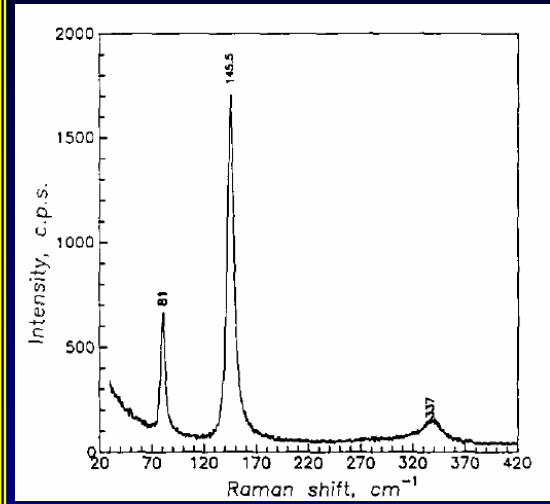
1

Identification of starting surface composition

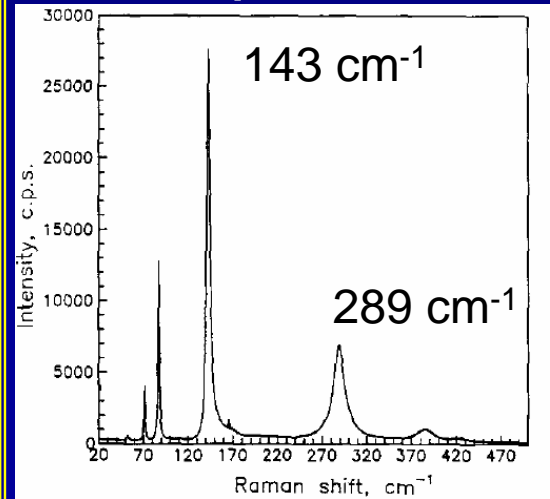


STANDARDS

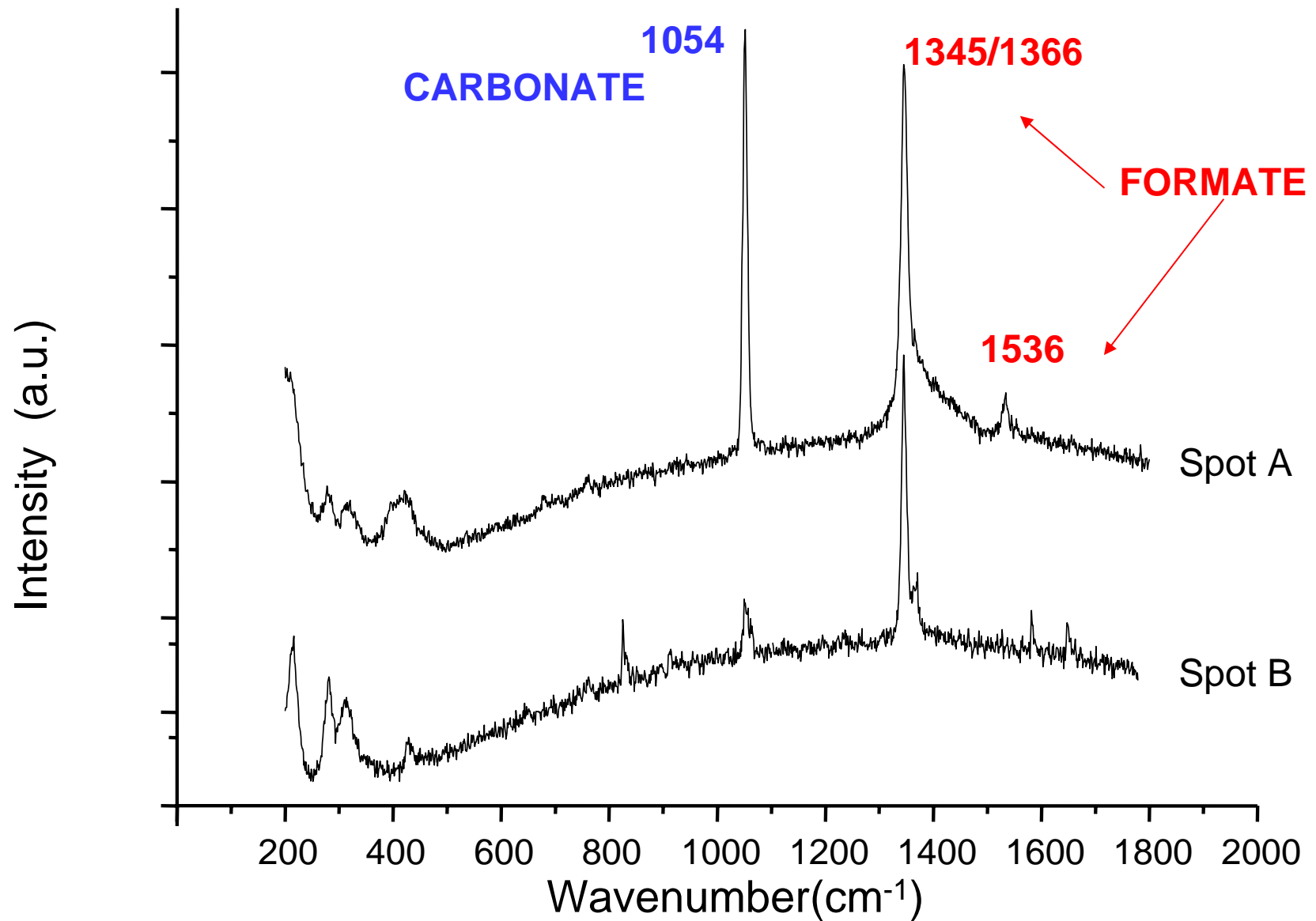
α -PbO



β -PbO

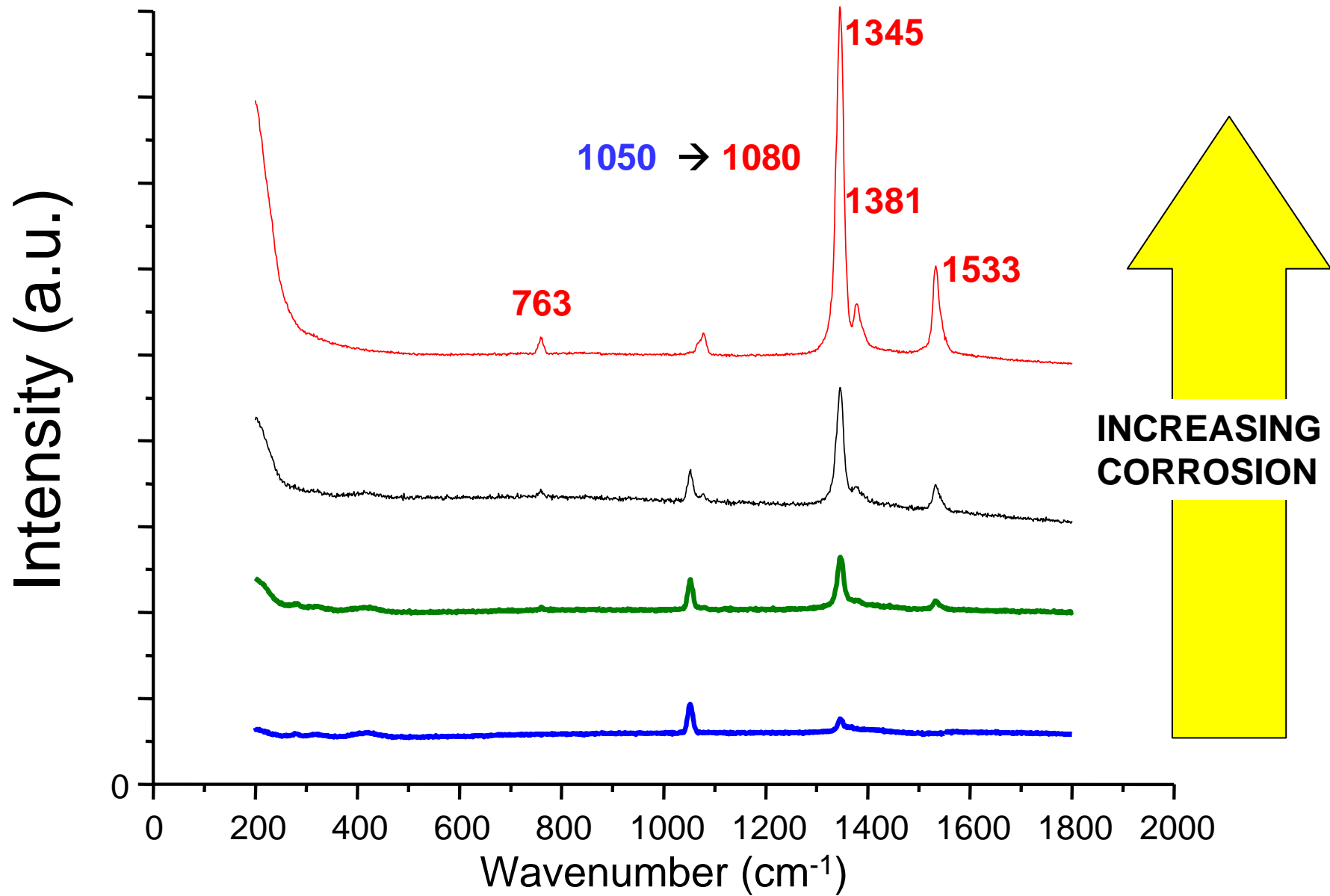


2 Identification of corrosion products (Kenwood House refurbished)



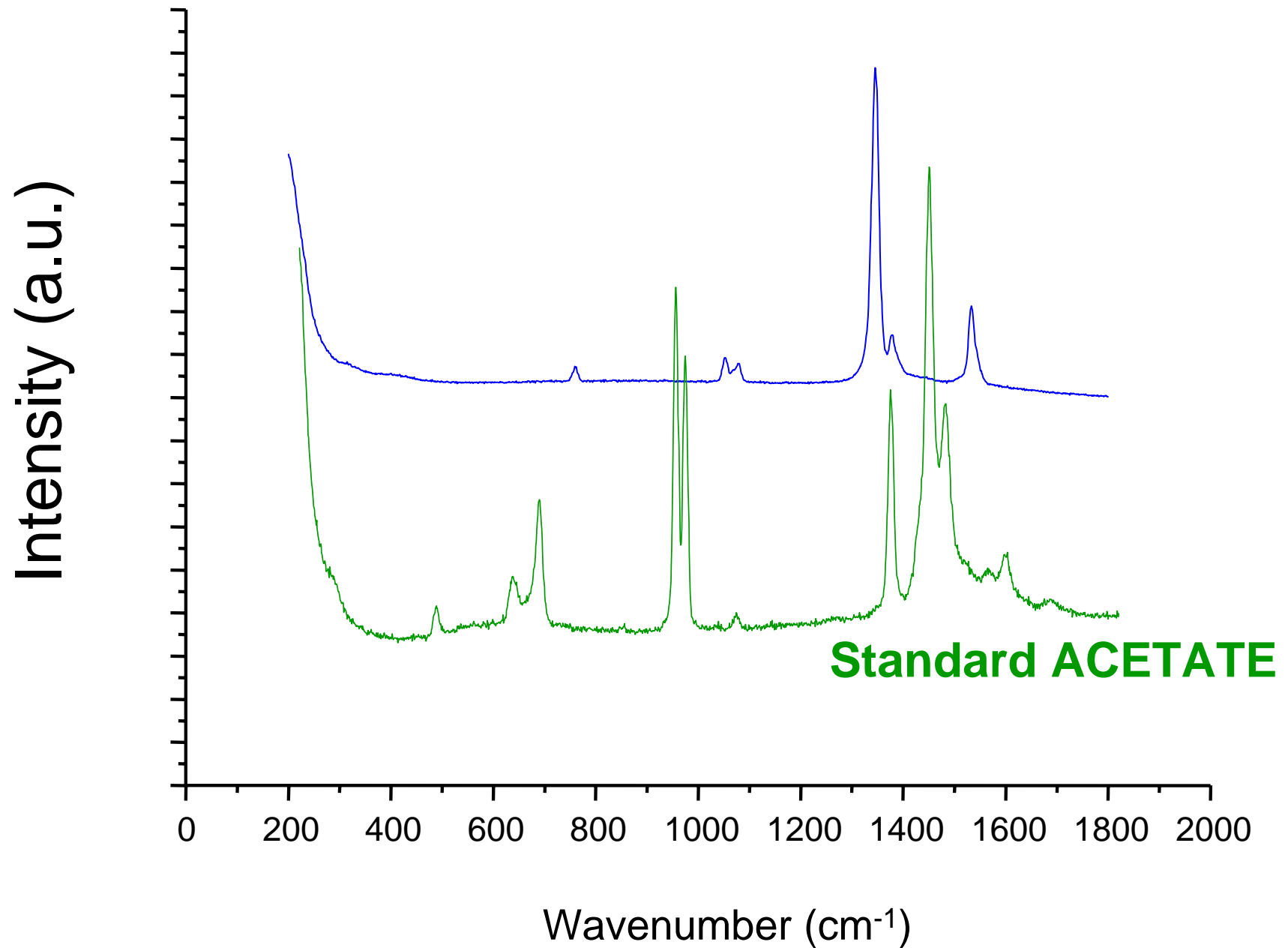
Different band relative intensity (i.e., bands correspond to different products)

3 Identification of corrosion products (Kenwood House OLD case)

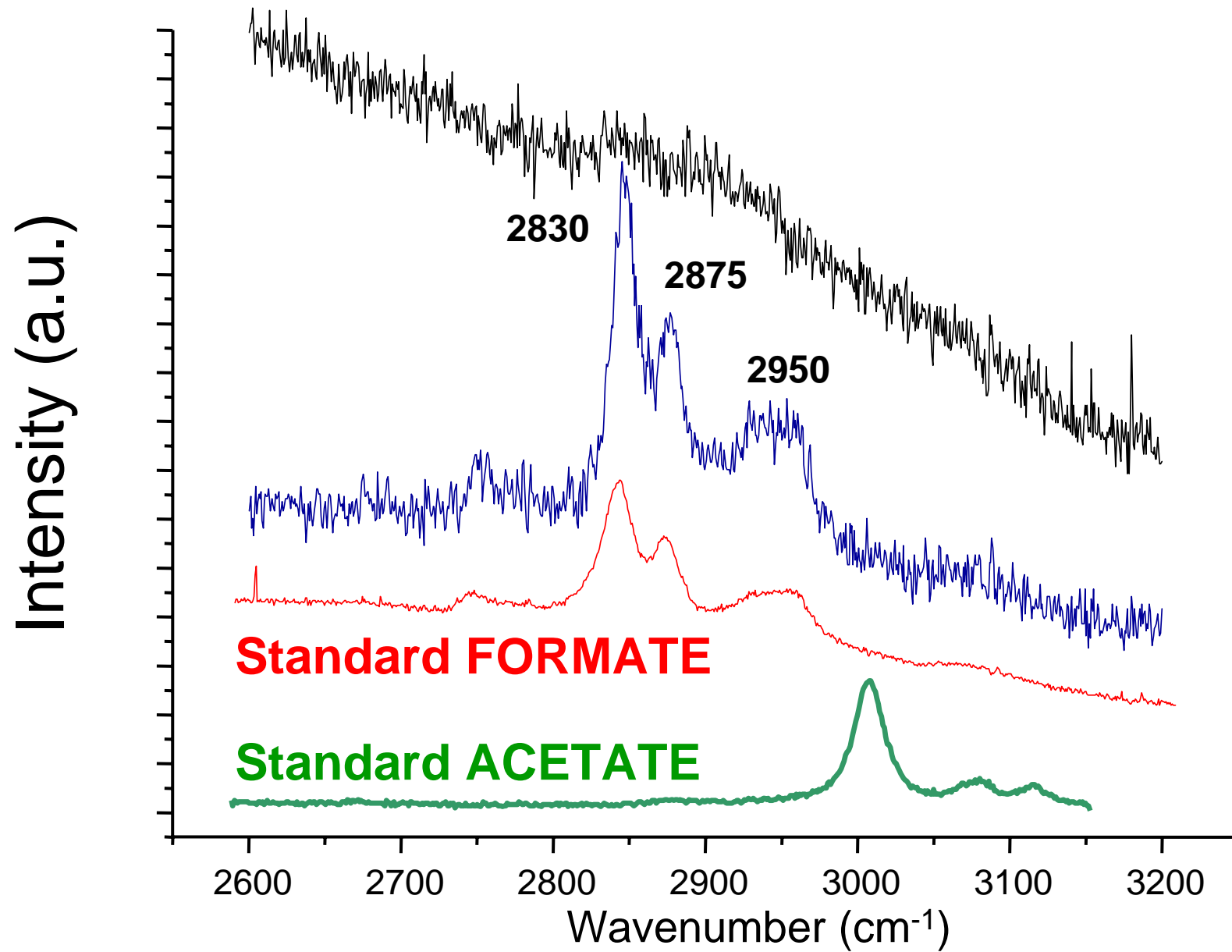


Different spots with different appearances – different bands relative intensities

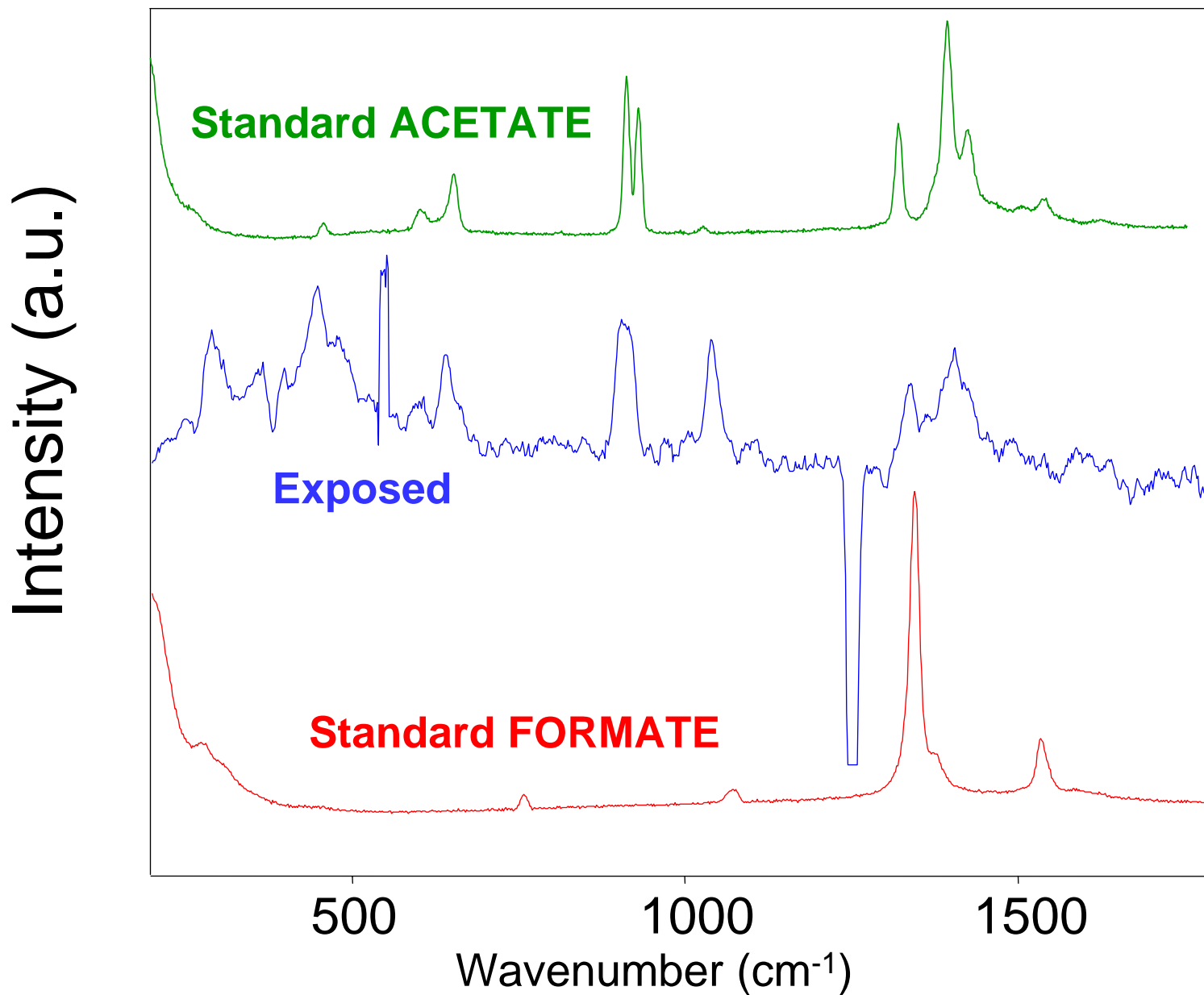
3 Identification of corrosion products (Kenwood House OLD case)



3 Identification of corrosion products (Kenwood House OLD case)

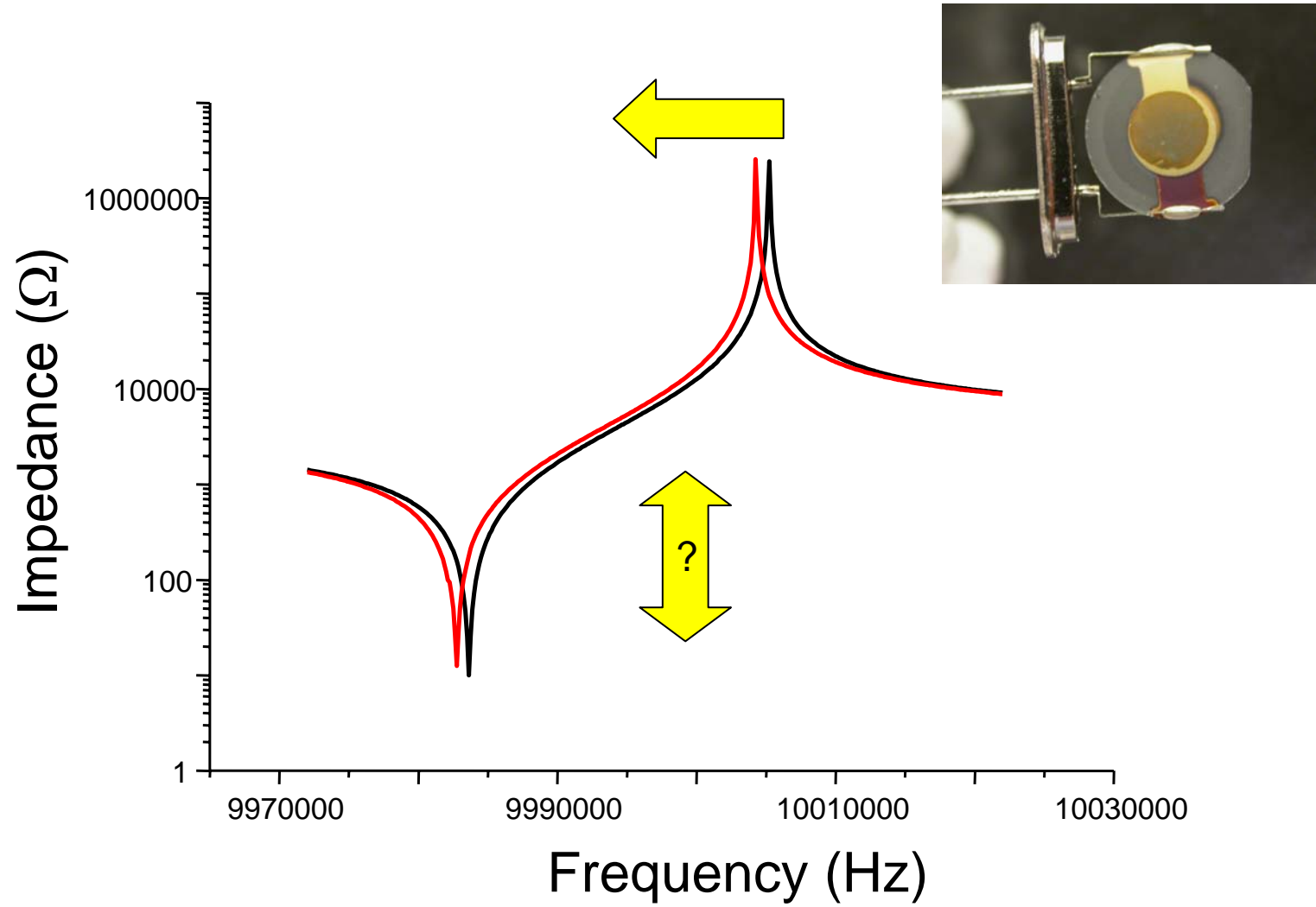


4 Identification of corrosion products (corrosion chamber-CH₃COOH)

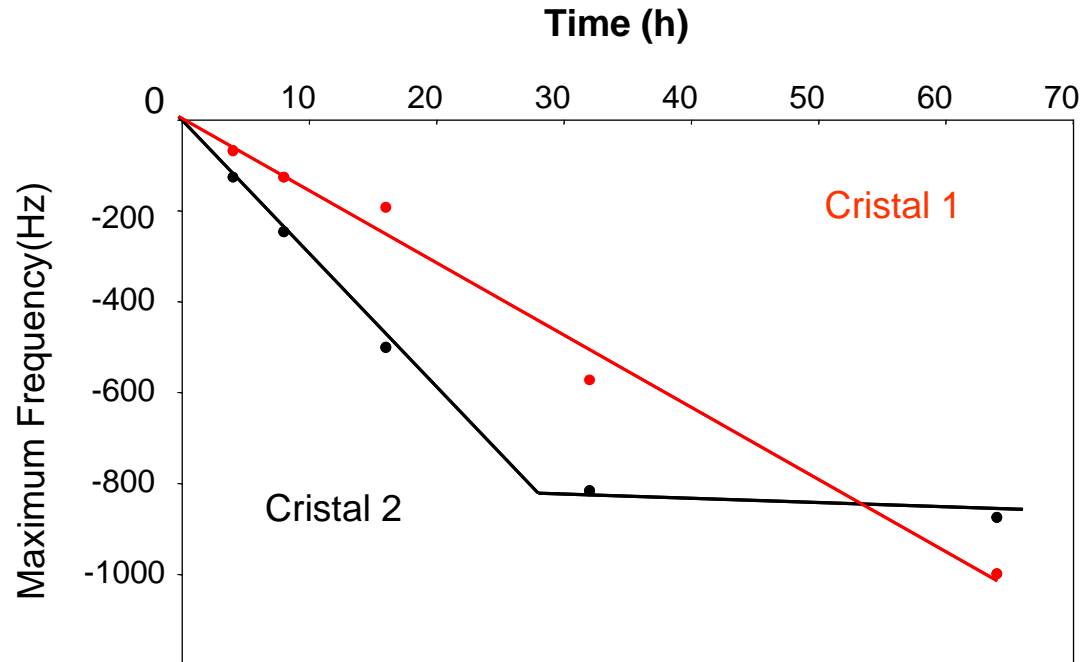
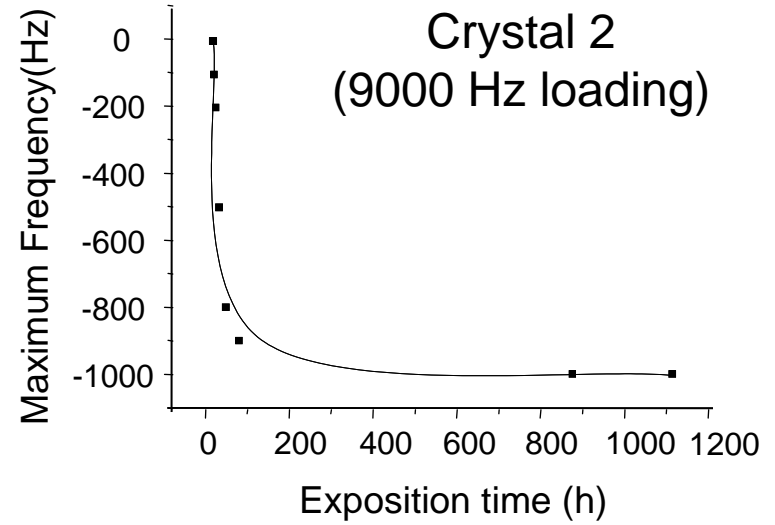
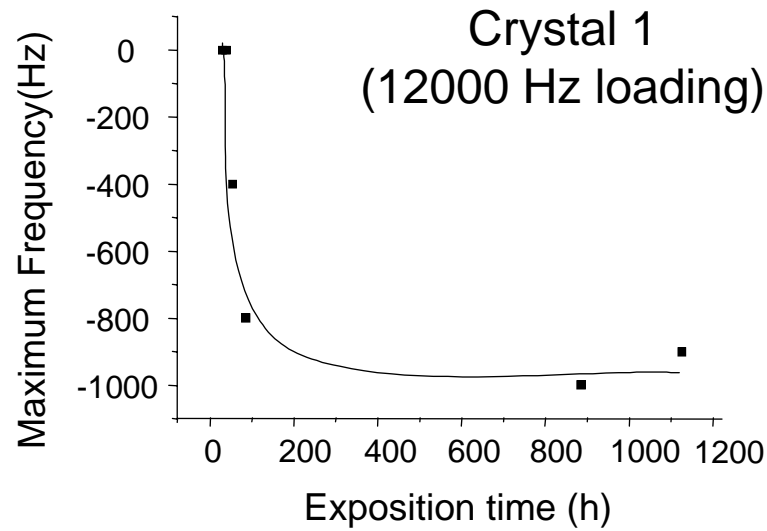


5

Impedance measurements upon corrosion



5 Impedance measurements upon corrosion



5 Impedance measurements upon corrosion

