

# Ceramics Expo 2023

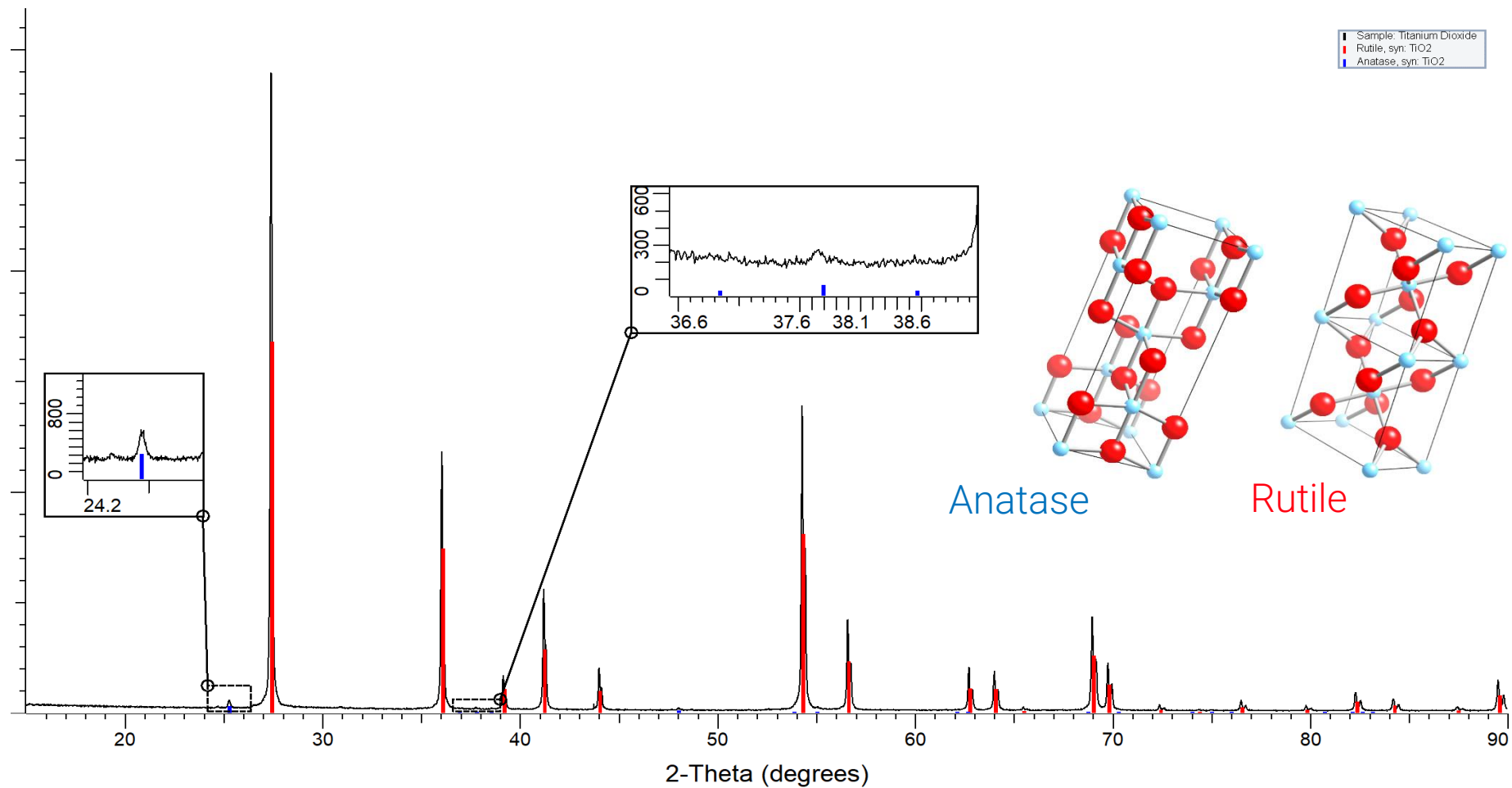
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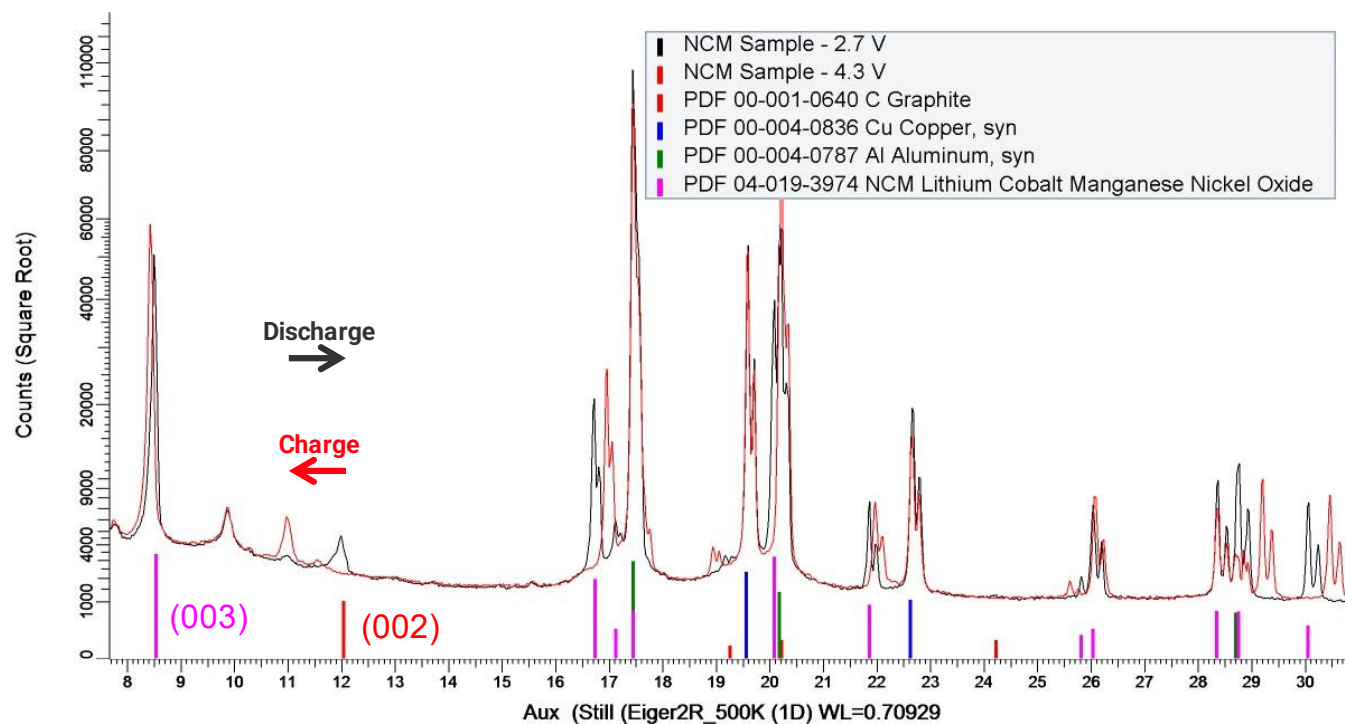
## **Nate Henderson, Ph.D. Senior Applications Scientist – X-ray Diffraction**

- **Structural Analysis, Phase Identification, Quantification, Microstructure, Amorphous Solids, Non-Ambient Diffraction**
- **Bruker AXS – Madison, Wisconsin**
  - **X-ray Diffraction (Structural Analysis)**
  - **X-ray Microscopy (3D Imaging)**
  - **X-ray Fluorescence (Elemental/Chemical Analysis)**

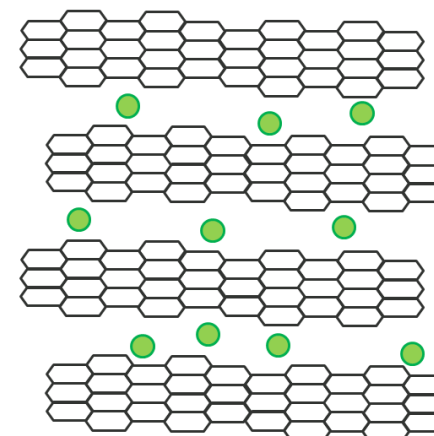
# Polymorphism and Quantification in $\text{TiO}_2$



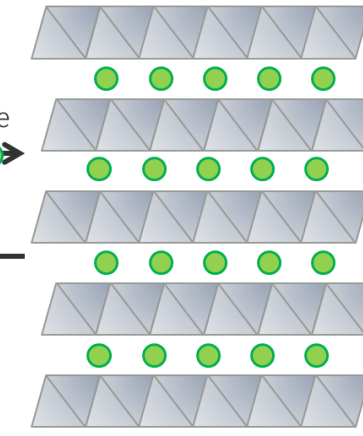
# Conductive Ceramics (Li(Ni,Mn,Co)O<sub>2</sub> Batteries)



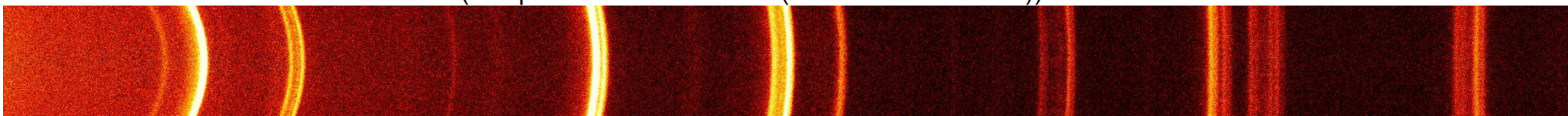
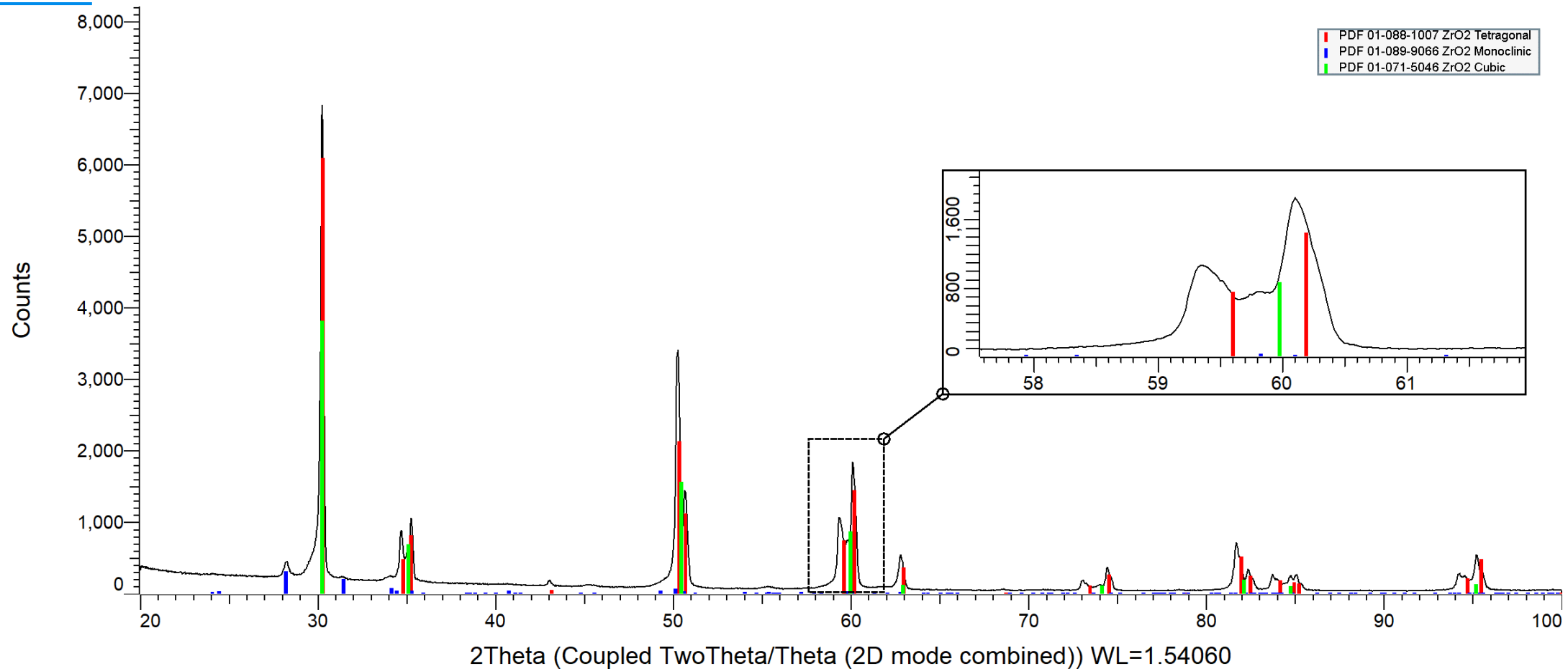
Anode (e.g., Graphite)



Cathode (e.g. Li(Ni,Mn,Co)O<sub>2</sub>)



# ZrO<sub>2</sub> Polymorphism in Fired Ceramic Parts



# Internal Structure with X-ray Microscopy / Computed Tomography

