



# MicroCrystalline Electron Diffraction (MicroED)

**Routinely solve high-resolution crystal structures without the need to grow large single crystals.**

**MicroED can extract structural information from crystals that are one-billionth the size required for X-ray diffraction**

**Micro Electron Diffraction makes accurate structure determination a cost effective, routine, and essential tool for molecules that cannot produce large crystals. Small crystals are typically much easier to obtain than larger ones, which also often suffer from twinning and multiple and/or mosaic lattices. Smaller crystals suffer fewer long-range defects and tend to be better-ordered.**

**Ideal for structure determination, absolute configuration using crystallite sizes in the range of 10-1000nm (for comparison Single Crystal XRD requires 1-100um).**

- Routinely solve high-resolution crystal structures without the need to grow large single crystals
- Obtain accurate structure determination from <1mg of solid material and in liquids - where crystals are 10-1000nm in size
- Accurately determine pure phase or mixtures, verify supplier starting materials
- Identify low level impurities and crystallinity in as received materials, Amorphous Solid Dispersions
- Assist process chemistry in phase ID
- Assess crystallization drops that appear cloudy, as small micro- and nanometer- sized crystals may be present and can be analyzed via Micro ED
- Determine impurities and metabolites

## Powered by the ELDICO ED-1...

The ED-1 system bypasses one of the main limitations of crystallography, namely – growing crystals of suitable size. As recently as 2021, MicroED was a relatively expensive technique that often posed significant data processing challenges. ELDICO and Triclinic have addressed these issues with a completely redesigned instrument which is optimized to reduce electron beam damage to the molecule. The ED-1 overcomes the limitations of older Cryo-TEM systems that have been used for MicroED. The ED-1 goniometer is unique, and the instrument uses a scanning mode vs. TEM mode. An automated software suite allows our on site crystallographers to efficiently and cost effectively process data to determine structural configurations (unit cells) up to absolute configurations.

Also Available:

XRPD  
VT-XRPD  
SAXS  
WAXRD  
DSC  
TGA  
DVS  
UV/Vis  
SEM  
EDX  
AFM  
FTIR  
HPLC  
IR  
RAMAN  
NMR  
KF  
GC  
LC/MS  
ICP-MS  
pKa/LogP  
Polarimetry  
Microtomy  
TabletTesting  
Optical Microscopy  
Digital Microscopy  
Particle Size Analysis  
Dissolution  
Stability

