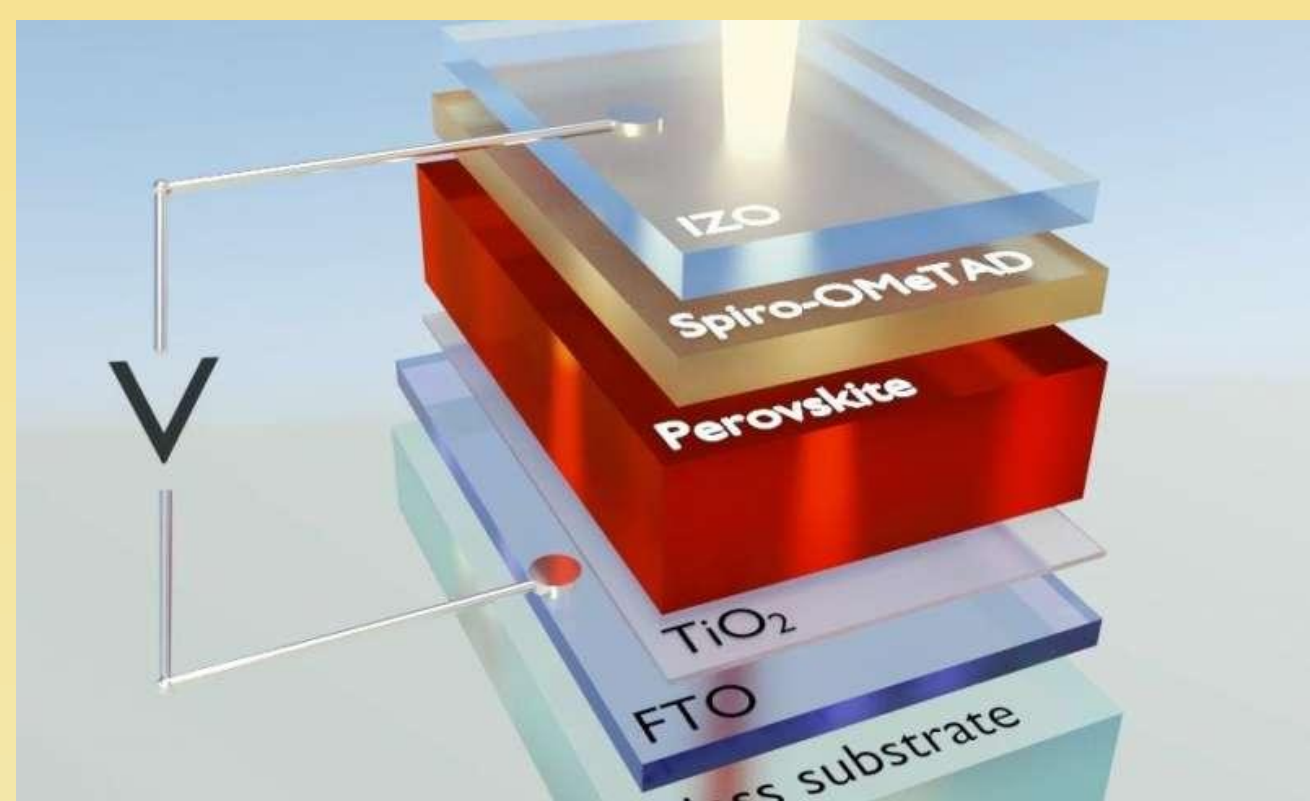


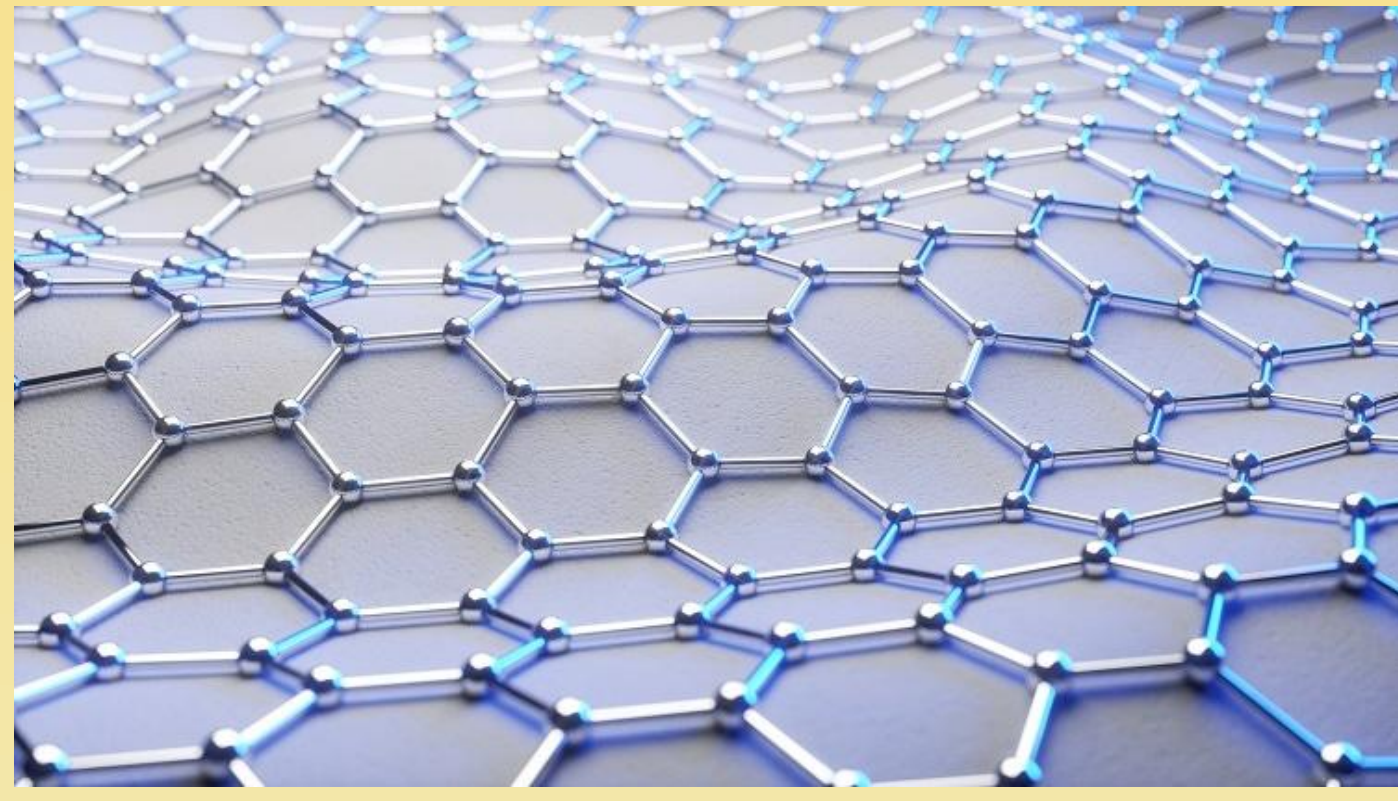
# Optoelectronic Properties of Hybrid Materials at Single Crystal level

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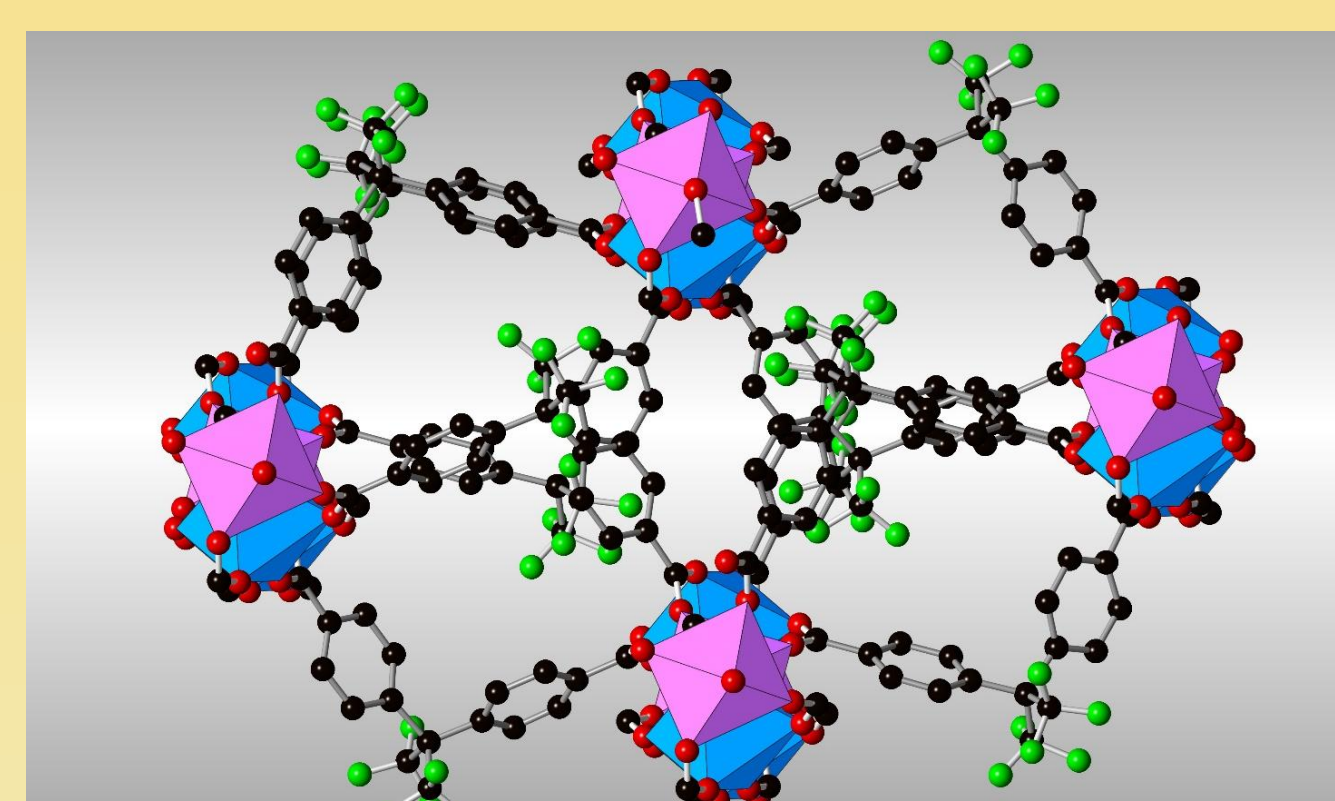
In recent years, one of the most booming topics in materials science has been the study of hybrid organic-inorganic materials. These solids contain a structural framework that gives them characteristics of both groups, in some cases with unique properties.



Photovoltaic materials



Graphenes

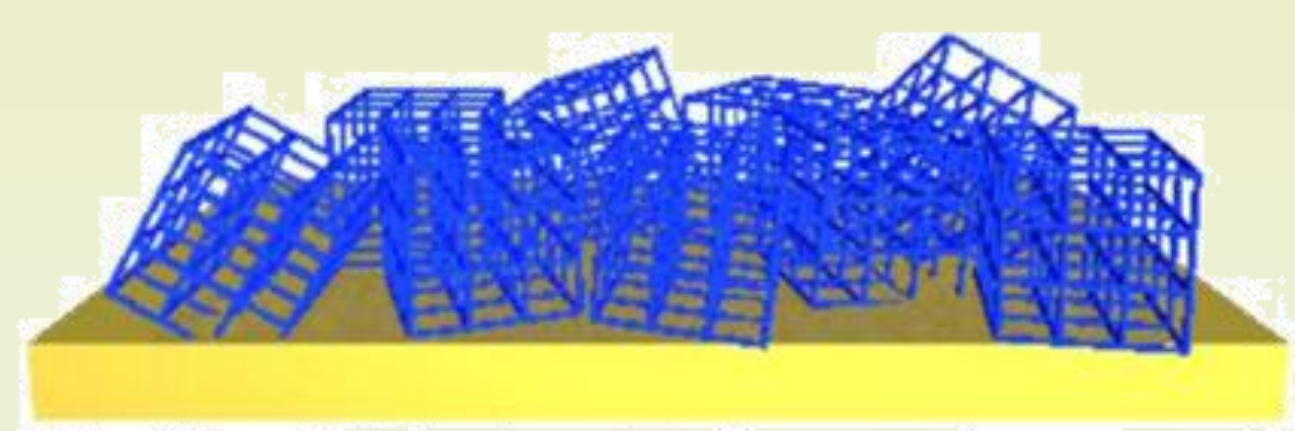


MOF's

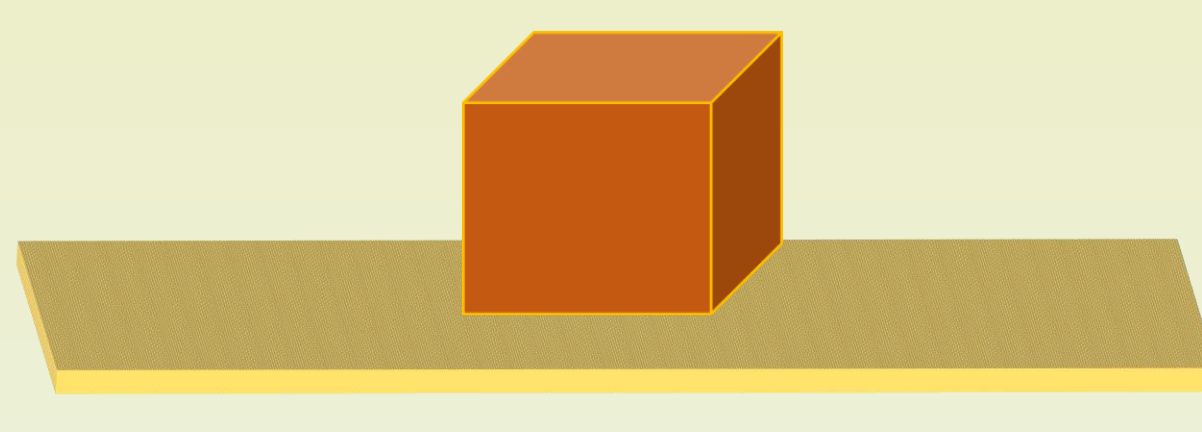


Semiconductor materials

This kind of materials exhibit optical properties such as LED emission, lasing or optical cavities function. Also, most of hybrid materials have semiconductor characteristics, thus our group developed a system for measuring these properties at single crystal level.



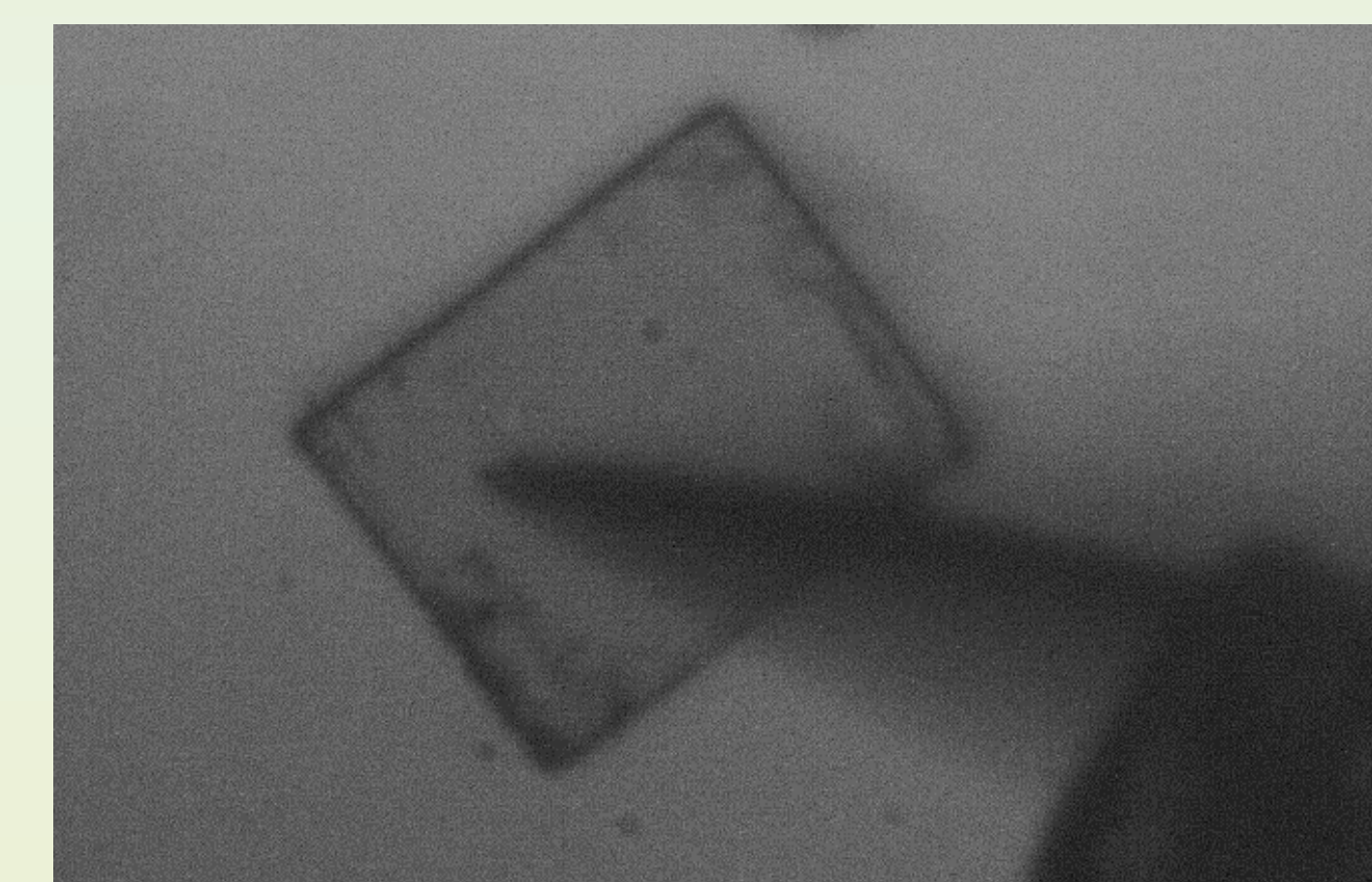
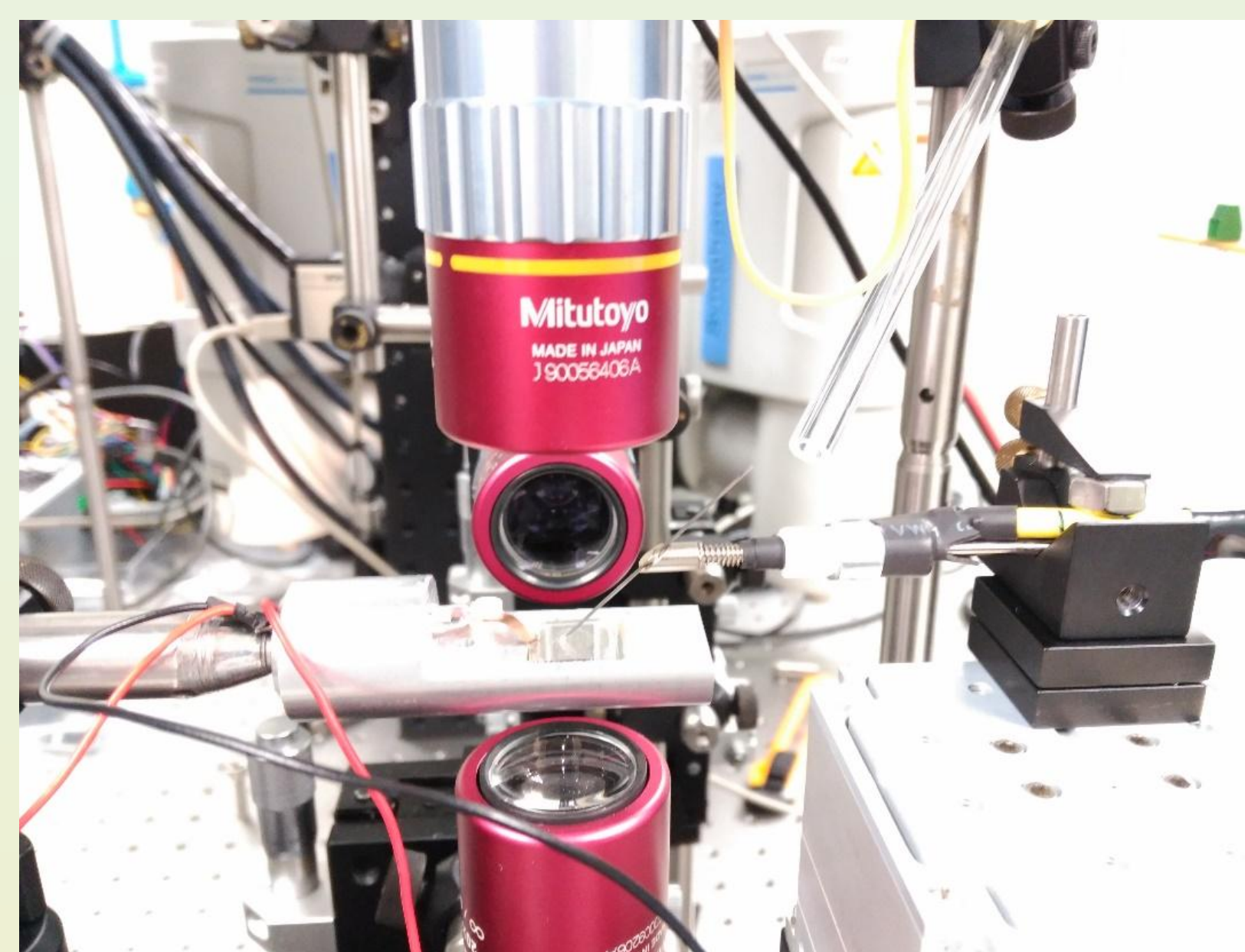
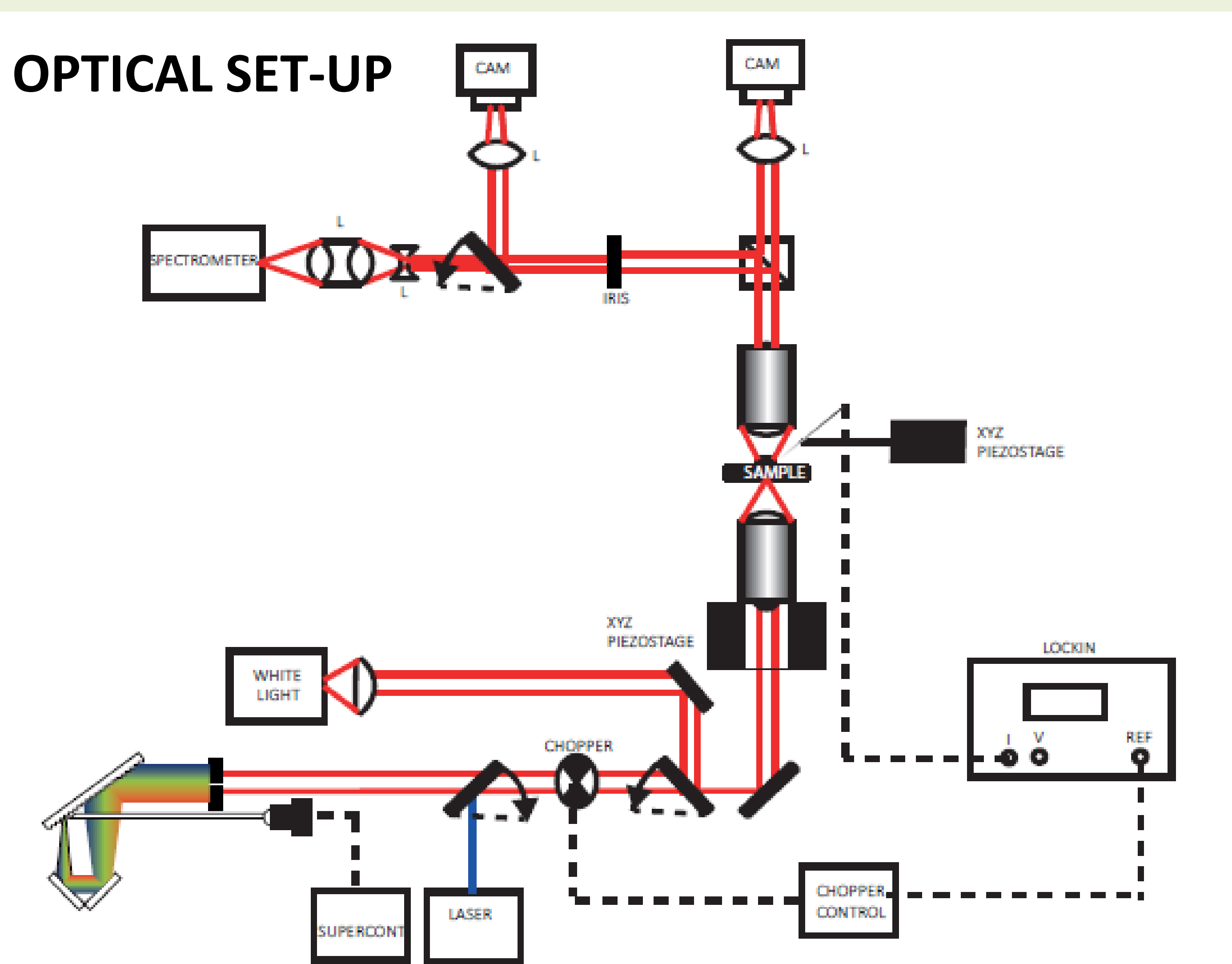
Polycrystalline film



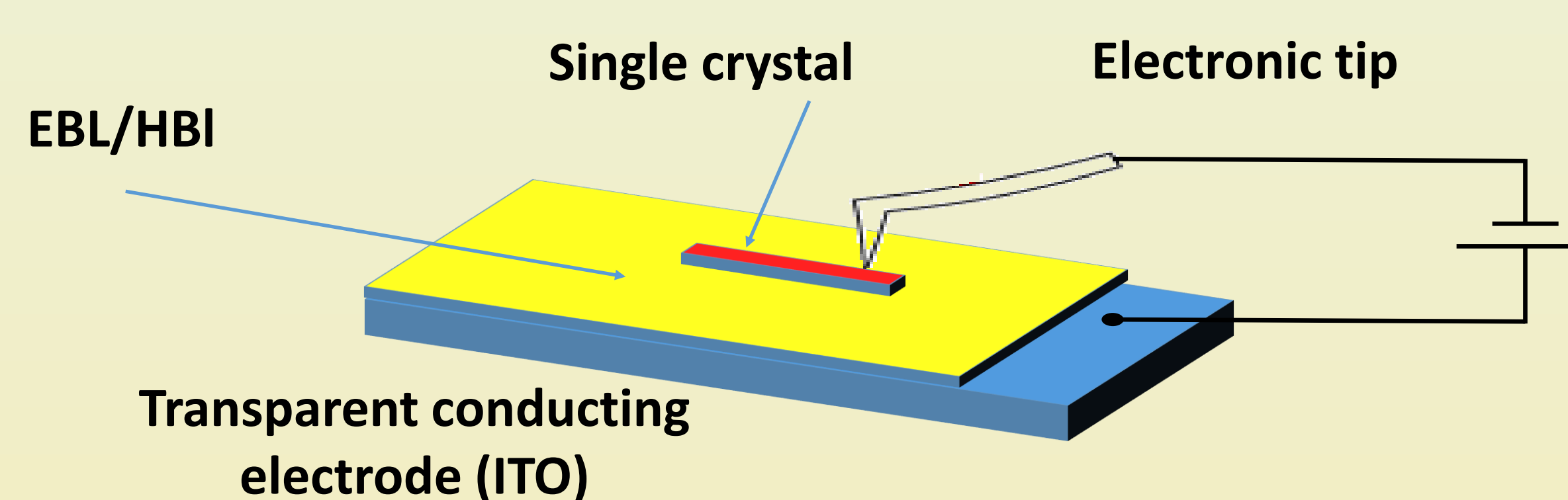
Single crystal

### Characteristics of single crystal measurements:

- Remove grain boundaries
- Avoid interphases
- Remove Interferences
- Size
- Morphology

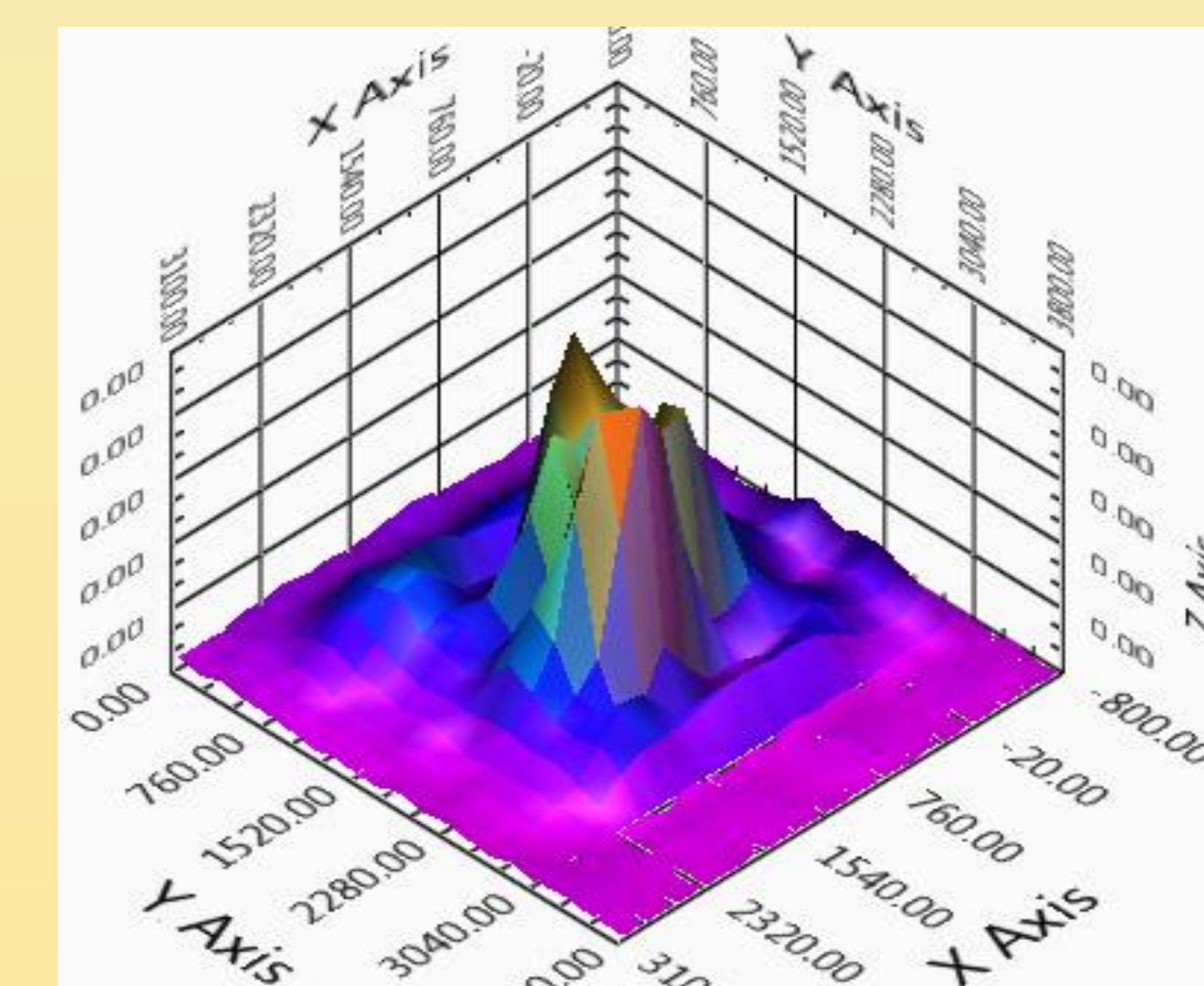
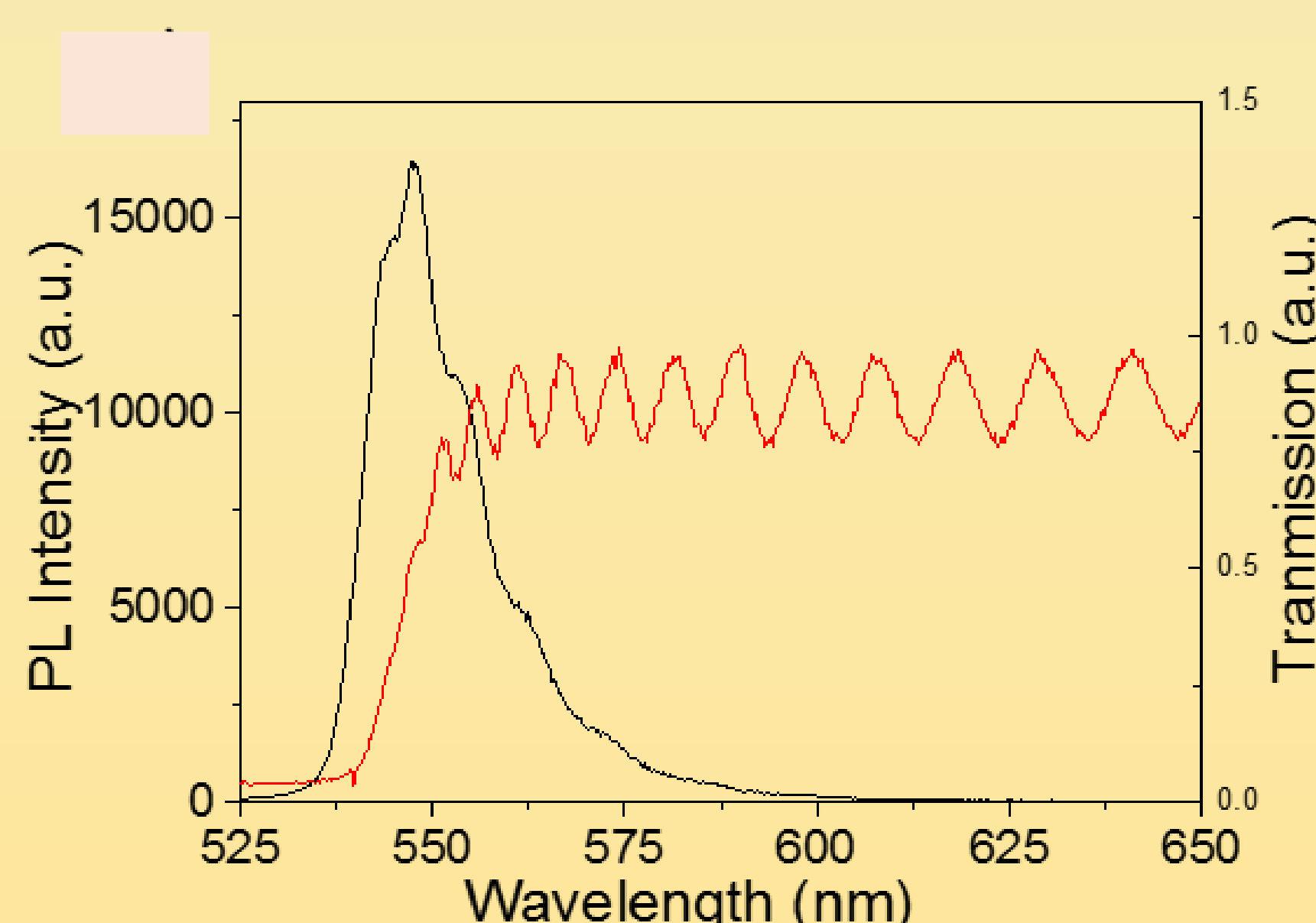
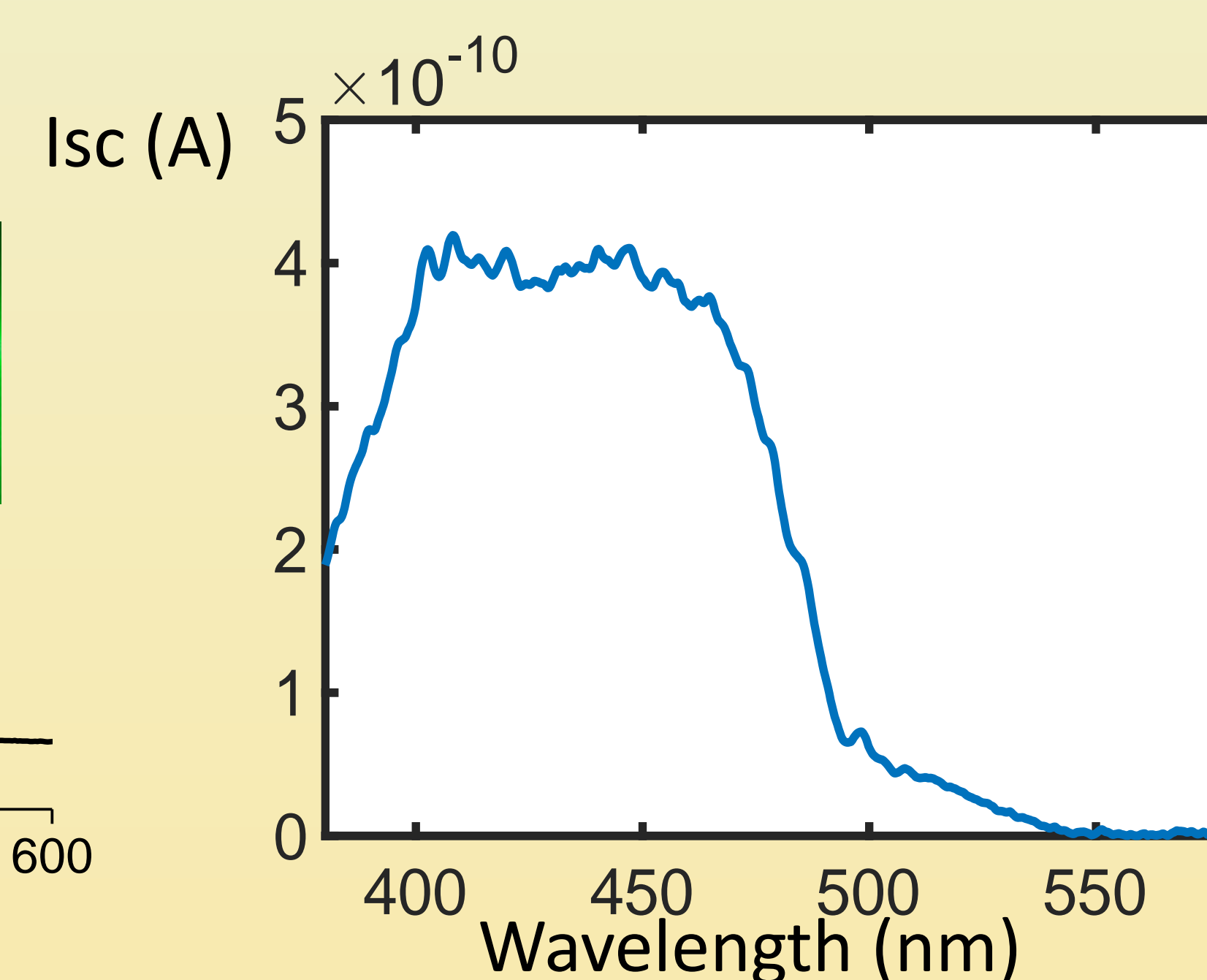
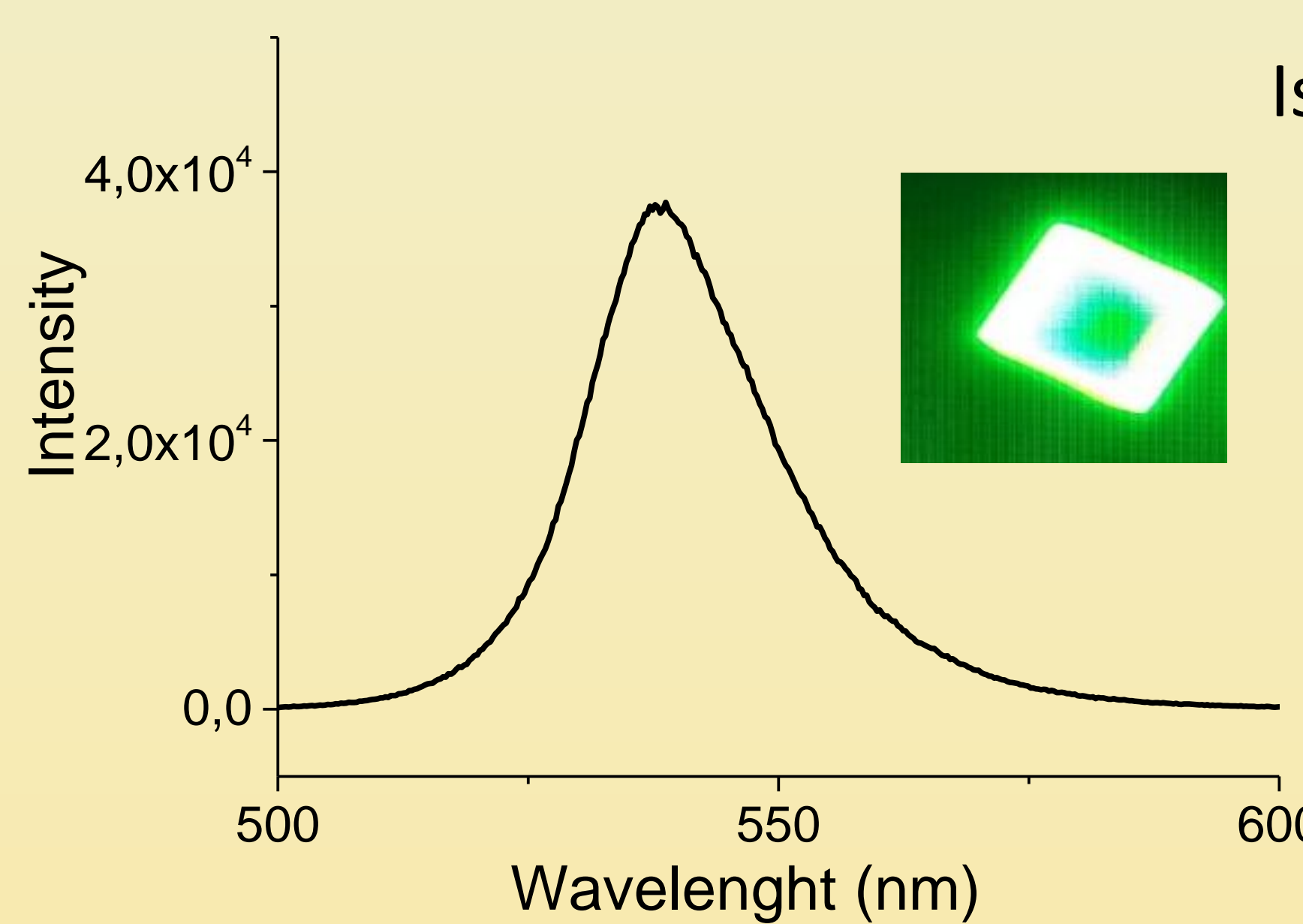


Tip contact with crystal



### Optoelectronic characterization techniques

- Photocurrent spectra
- I-V curves
- Mapping
- Impedance spectroscopy
- Photoluminescence spectra



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