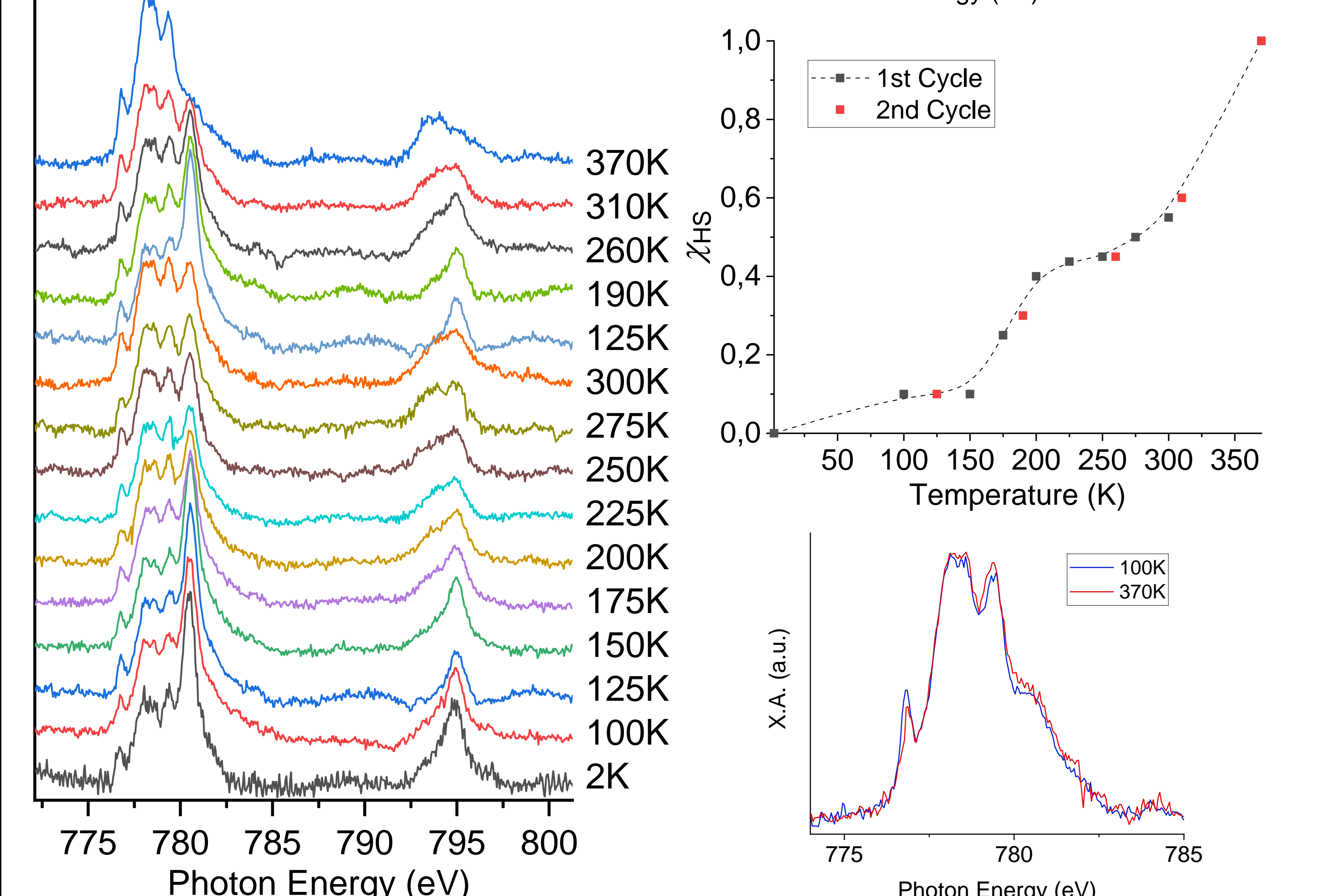
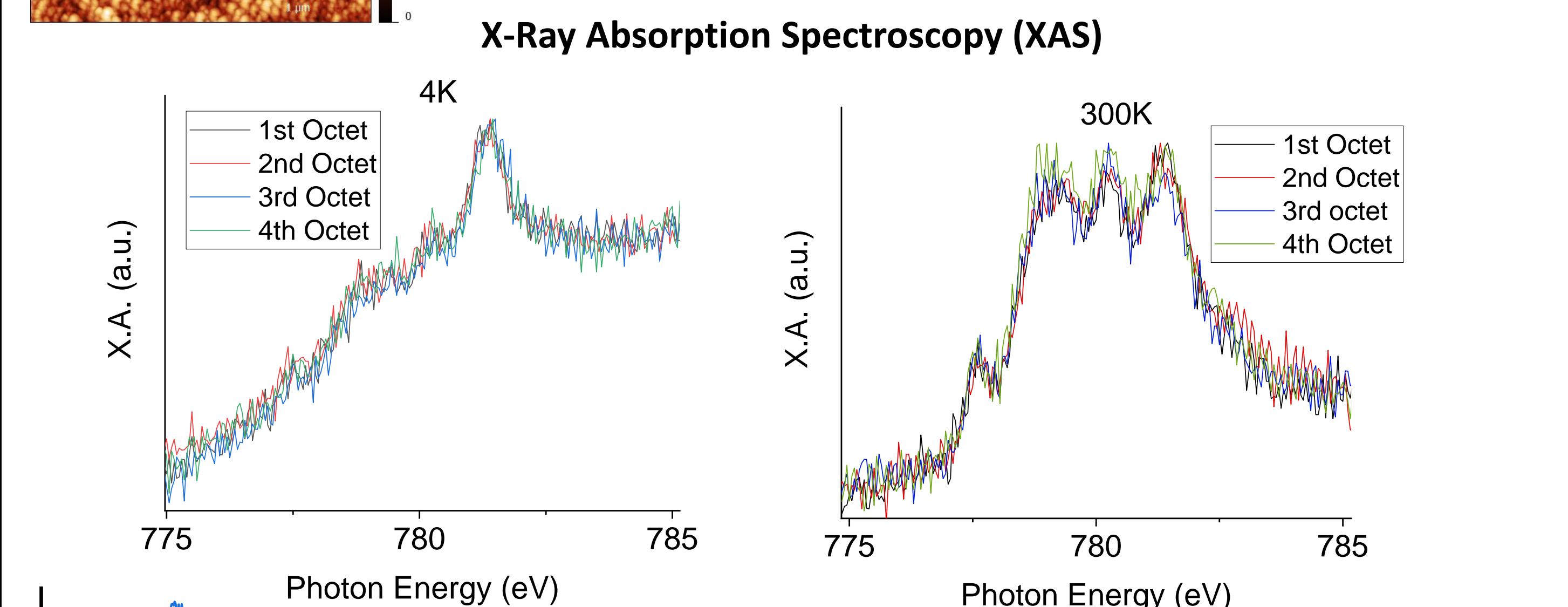
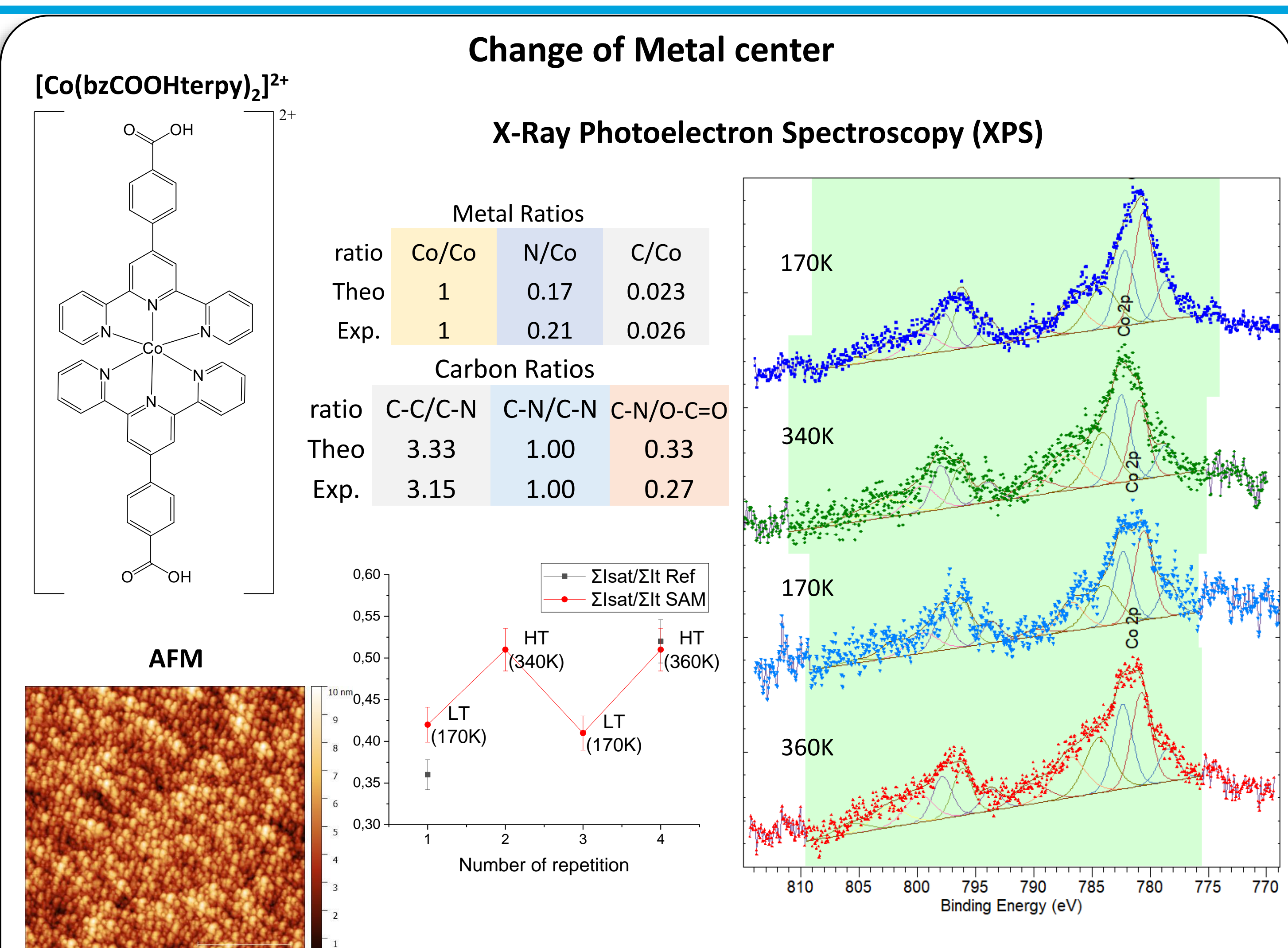
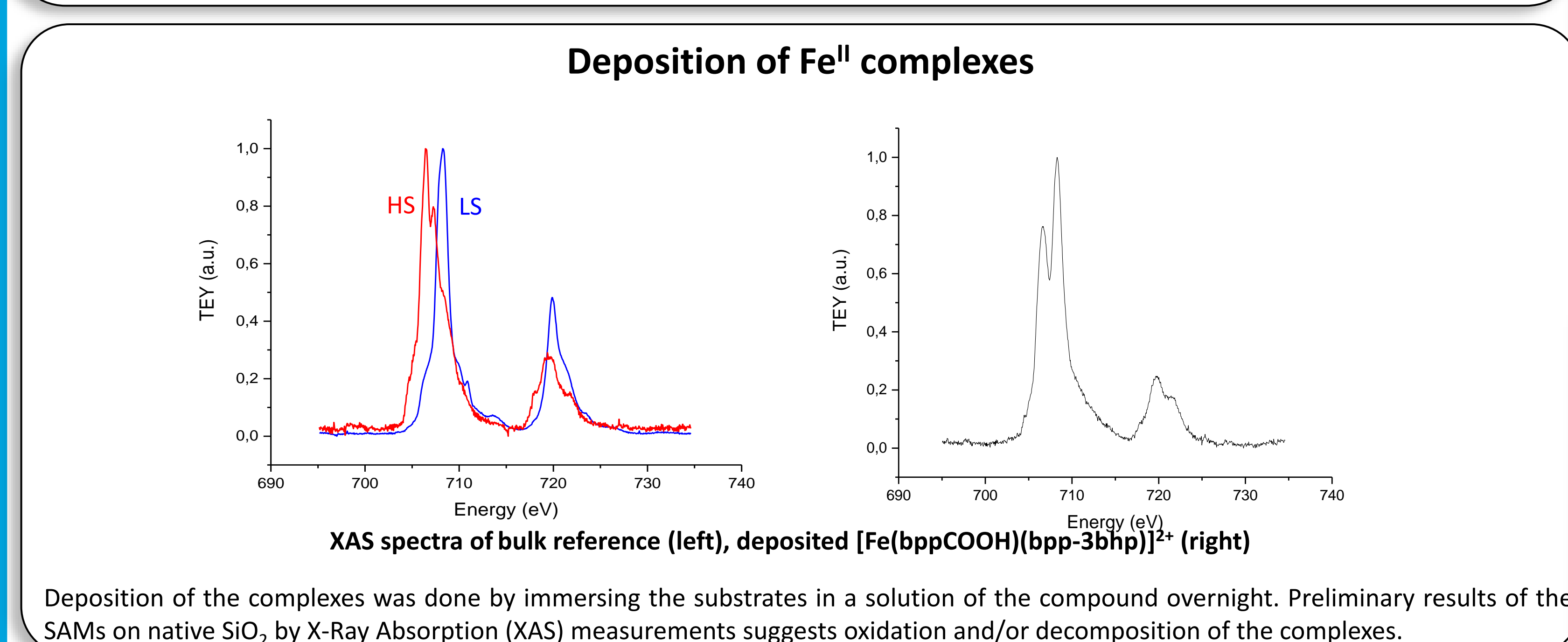
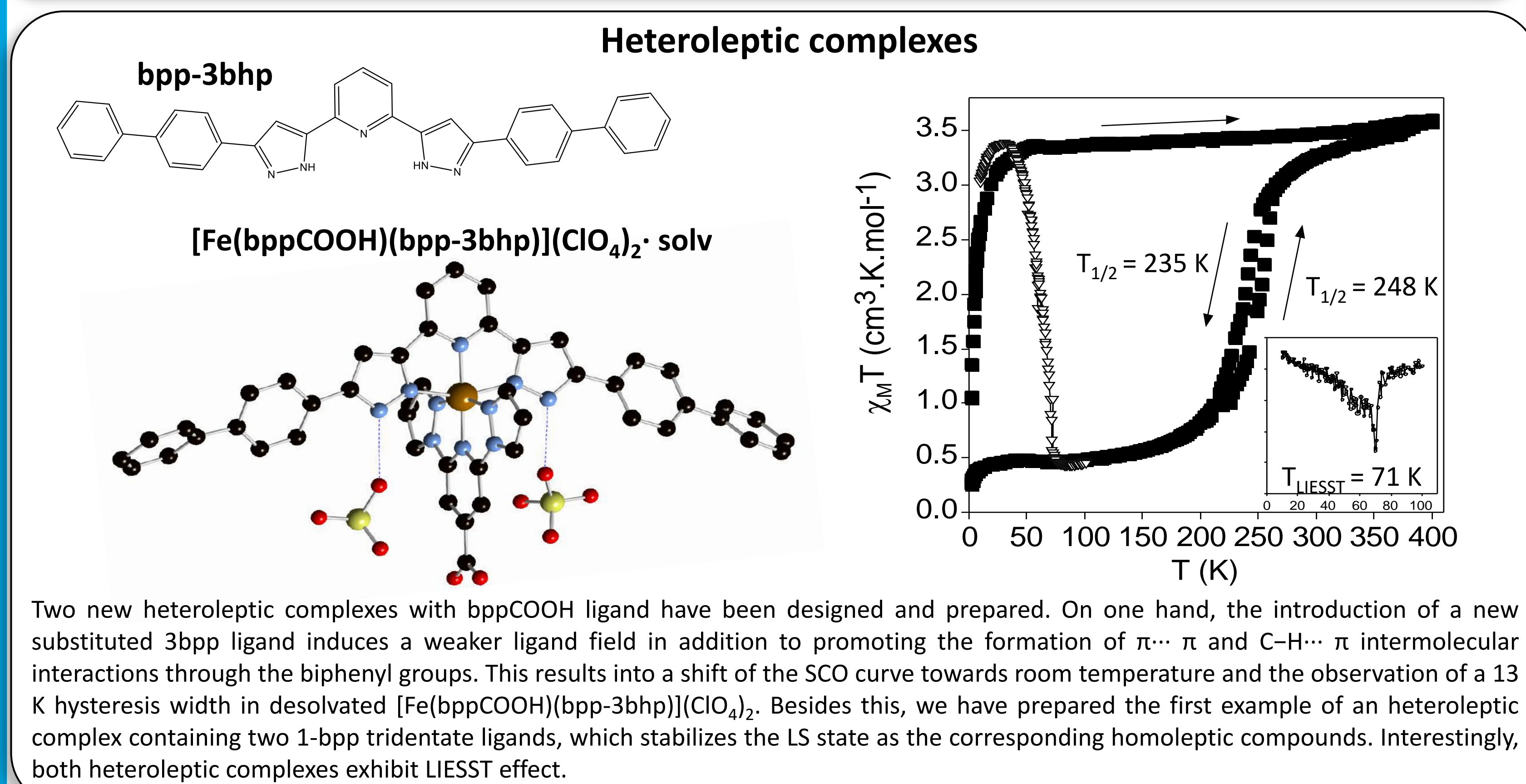
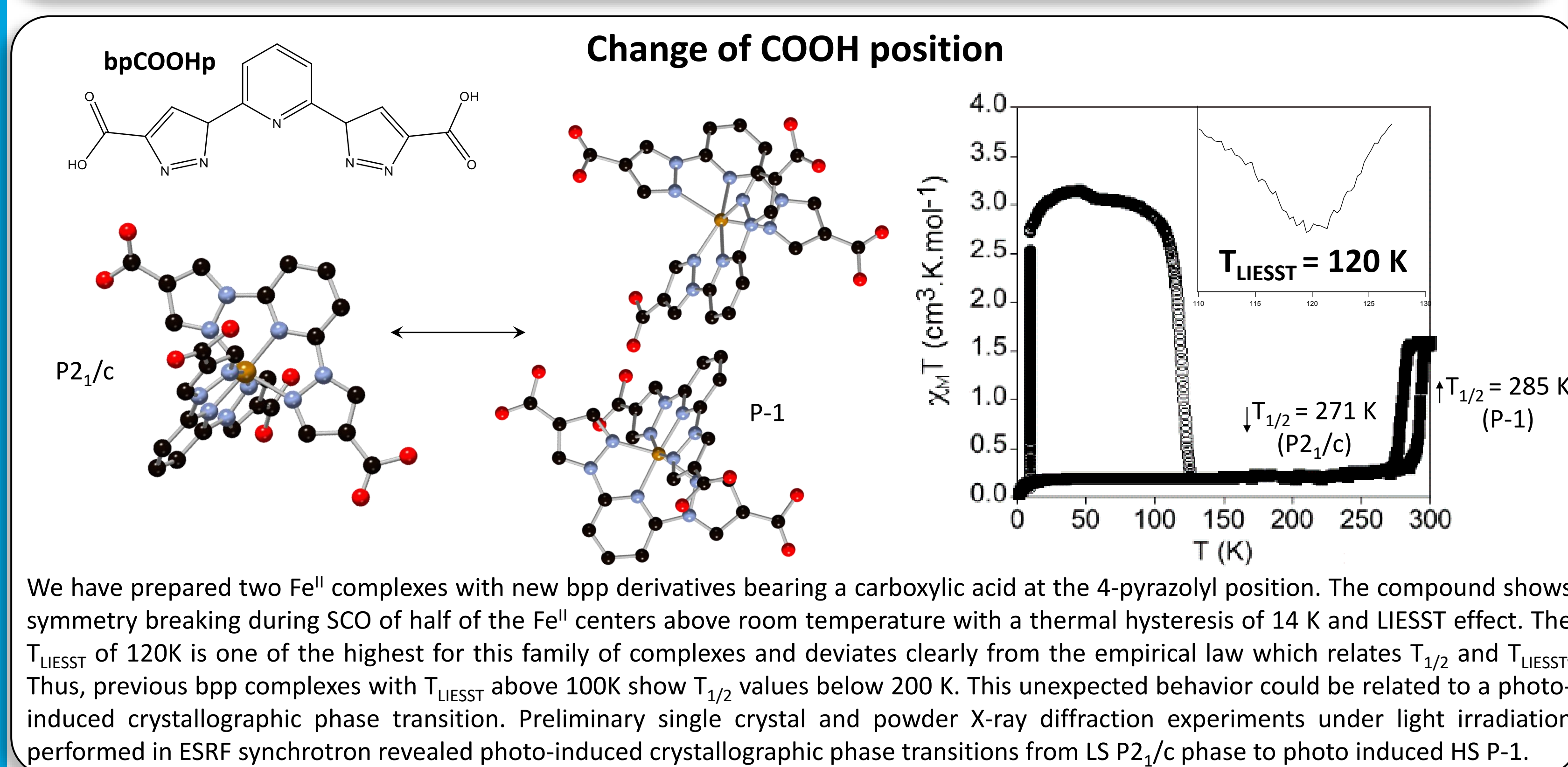
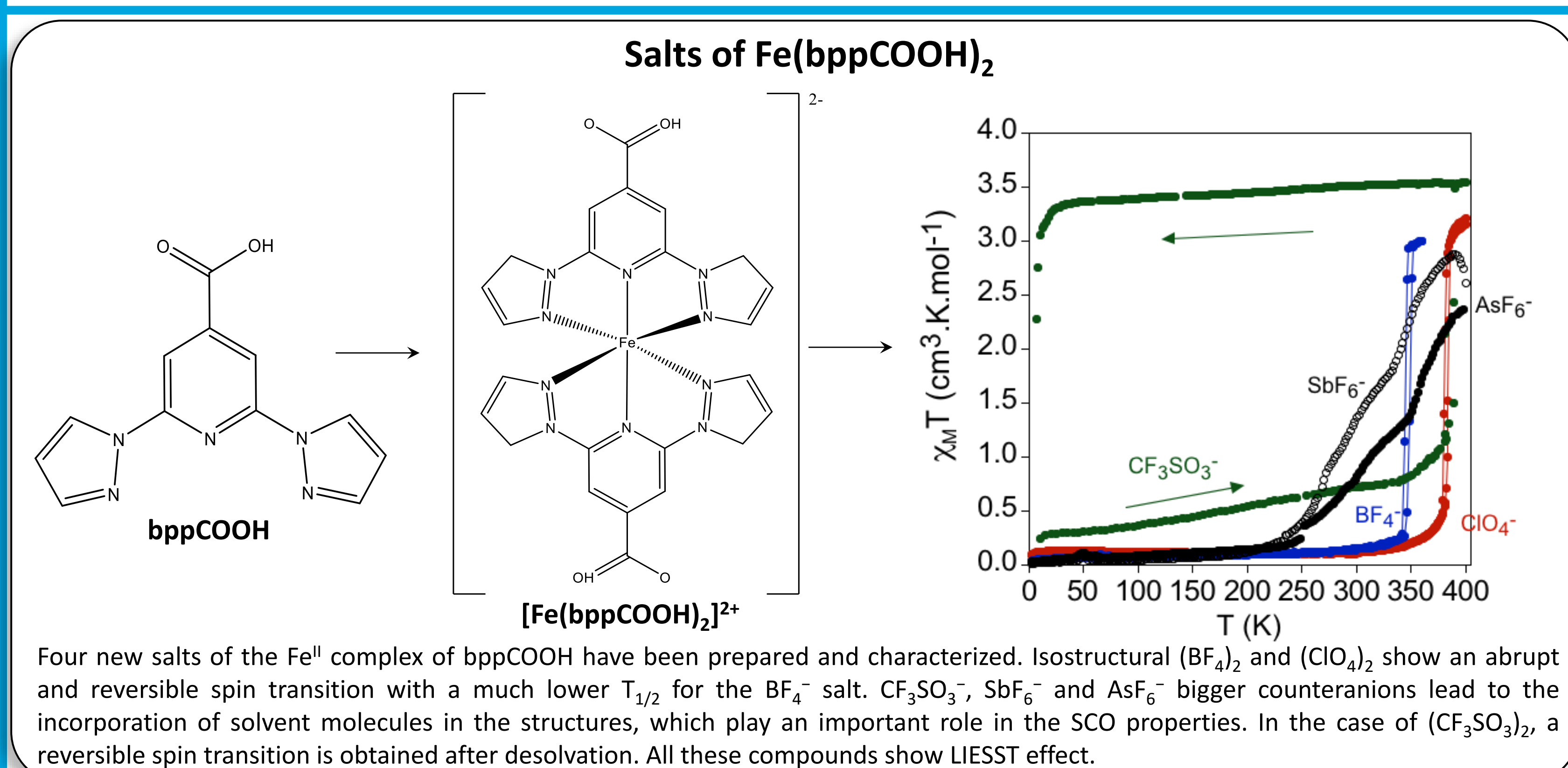


## Self-assembled monolayers of bis-tridentate SCO complexes

Víctor García-López, Niccolò Giaconi, Lorenzo Poggini, Matteo Manini, Miguel Clemente-León, Eugenio Coronado



To improve these results, we have prepared and characterized a family of SCO  $\text{Co}(\text{II})$  complexes with tridentate ligands based on terpyridine containing carboxylic acid groups for grafting on metal-oxide and noble metal surfaces. Deposition of the complex shown above have been studied. AFM images show no aggregates. Preliminary XPS and XAS measurements suggest that the molecule is stable on these surfaces. SCO properties are preserved. Reversibility with temperature has been also proven. Unfortunately, after heating at 370K the molecules remain trapped in the same spin state upon cooling.

### Conclusions

- Incorporation of carboxylic acid groups in the 1- $\text{bpp}$   $\text{Fe}^{\text{II}}$  complexes affords interesting spin-crossover complexes showing temperature-, light- or solvent-induced spin transitions and an example of symmetry breaking during spin-crossover with a  $T_{\text{LIESST}}$  of 120K.
- It is possible to prepare heteroleptic  $\text{Fe}^{\text{II}}$  complexes containing  $\text{bppCOOH}$  ligand, which show SCO and LIESST effect in the bulk.
- Deposition on surfaces presents problems associated to the lability of the  $\text{Fe}^{\text{II}}$  center.
- New  $\text{Co}(\text{II})$  SCO complex containing terpy ligand derivative suitable for surface deposition have been synthesized.
- It is possible to prepare  $\text{Co}(\text{II})$  SAMs with the terpy ligand derivatives functionalized with carboxylic acid groups.
- Reversible changes with temperature take place.

### CONTACT PERSON

Víctor García López  
 Instituto de Ciencia Molecular  
 Universitat de València  
 Catedrático José Beltrán 2, 46980,  
 Paterna, Spain  
 victor.garcia-lopez@uv.es

### REFERENCES

Víctor García-López, *et. al.* Dalton Trans., **2018**, 47, 16958  
 Víctor García-López, *et. al.* Chem. Commun., **2019**, 55, 12227  
 Víctor García-López, *et. al.* Inorg. Chem., **2019**, 58, 12199-12208