Past/recent work from Addison Lab:

- Metalloprotein models, using symmetry reduction *via* non-tetragonal donor sets, using tripod ligands, steric hindrances.

- Oligonuclear systems for spin-spin interactions in magnetic materials & multimetallic proteins

↓

Metal-organic frameworks (MOFs)

- Ni-, Cu- & Ru-diimines as luminophores, e-transfer reagents, chirality, spontaneous resolution.

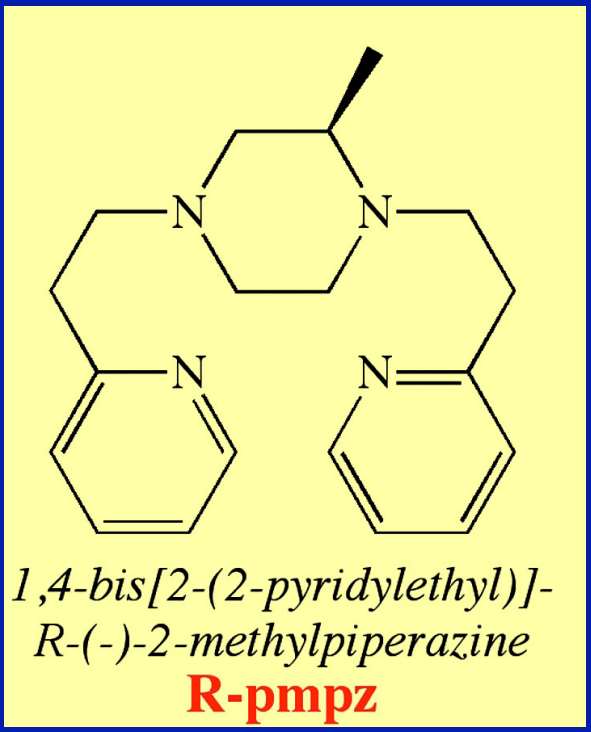
Recent papers:

- *Structure, magnetic and luminescence properties of the lanthanide complexes $Ln_2(Salphen)_3.H_2O$ (Ln = Pr, Nd, Sm, Eu, Gd, Tb, Dy; H_2Salphen = N,N,0-bis(salicylidene)-1,2-phenylenediamine)*
  E.A. Mikhalyova, A.V. Yakovenko, M. Zeller, K.S. Gavrilenko, S.E. Lofland, A.W. Addison* & V.V. Pavlishchuk*, *Inorg. Chim. Acta* **414** (2014) 97–104.

- *Ru(II) thioether complexes with dangling pyridine ligands*
  G.T. Reeves*, A.W. Addison, M. Zeller & A.D. Hunter, *Polyhedron* **68** (2014) 70–75.

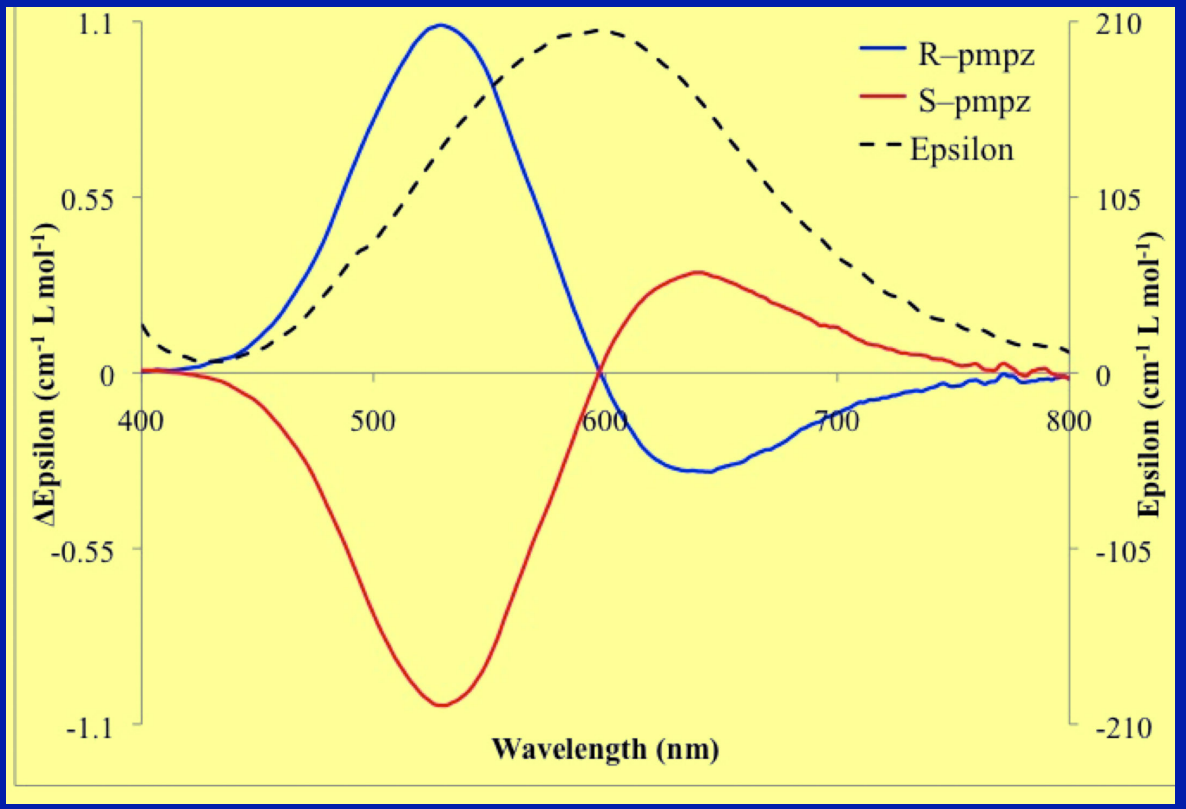
- *Manifestation of π-π Stacking Interactions in Luminescence Properties and Energy Transfer in Aromatically-Derived Tb, Eu and Gd Tris(pyrazolyl)borate Complexes.*
  E.A. Mikhalyova, A.V. Yakovenko, M. Zeller, M.A. Kiskin, Y.V. Kolomzarov, I.L. Eremenko, A.W. Addison* & V.V. Pavlishchuk*, *Inorg. Chem.* **54** (2015) 0000-

* *Ruthenium(II) complexes of some simple classic amine ligands.*
  G.T. Reeves,* A.W. Addison & M. Zeller, *Inorg. Chim. Acta*, submitted.

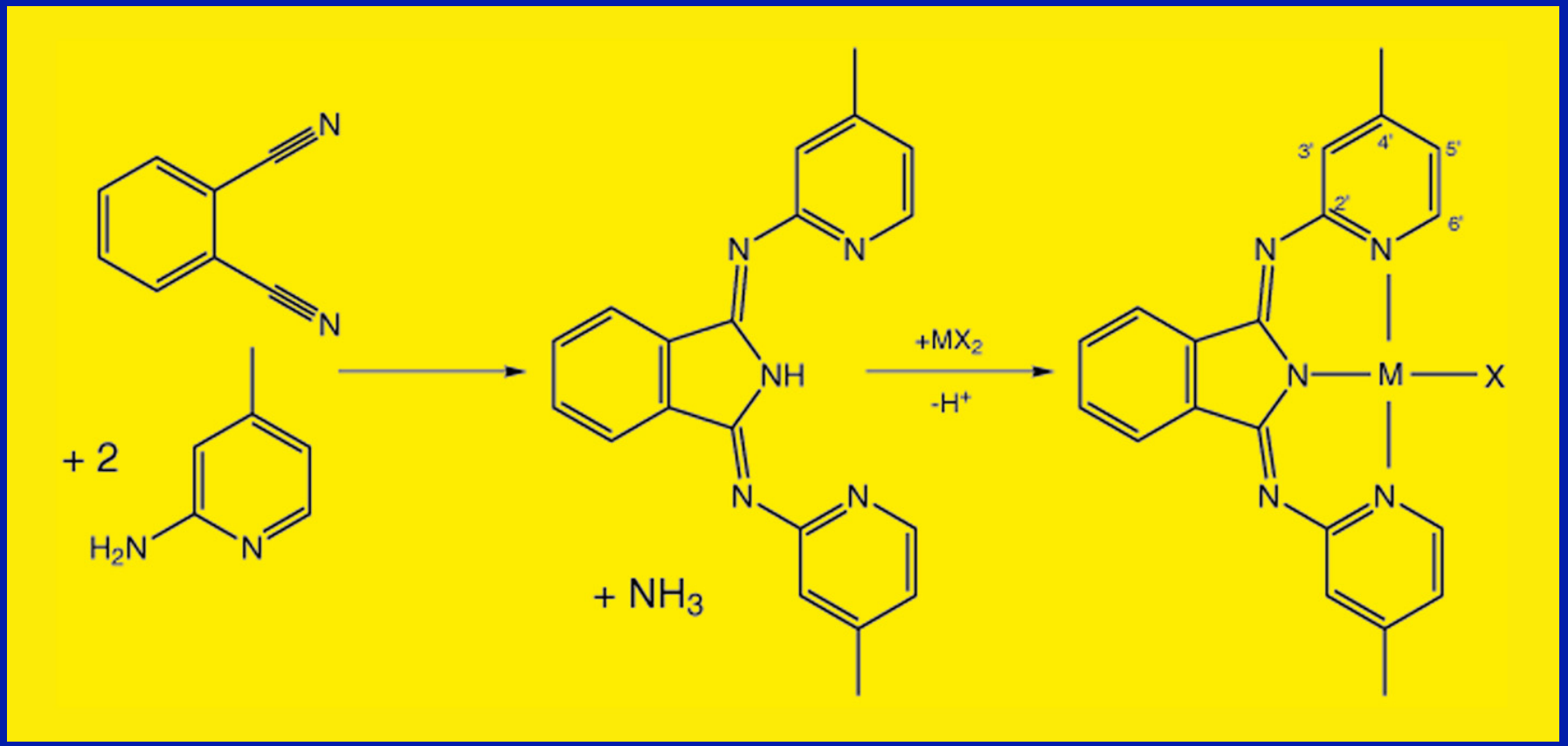


1,4-bis[2-(2-pyridylethyl)]-R-(-)-2-methylpiperazine

R-pmpz



Near-UV/Vis absorption & CD of chiral Cu(II) complex

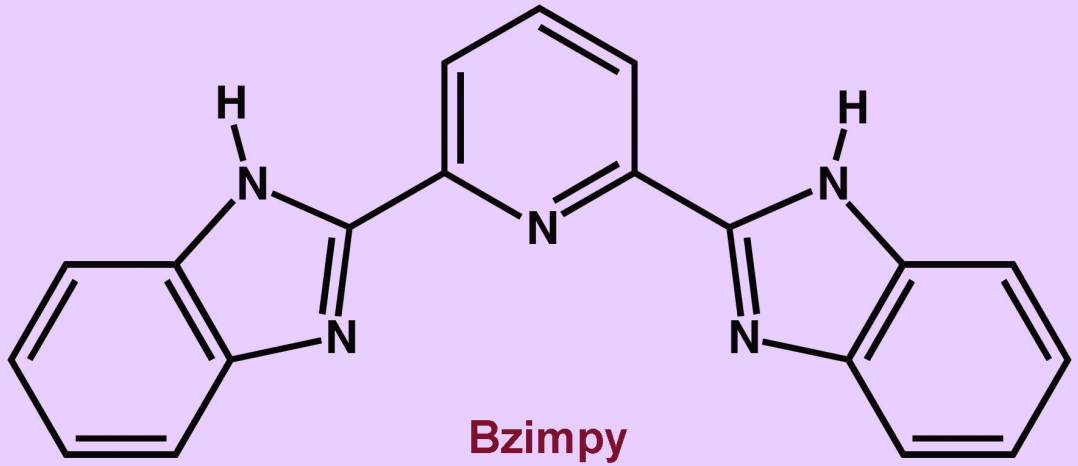


Bis(pyridylimino)isoindolines:

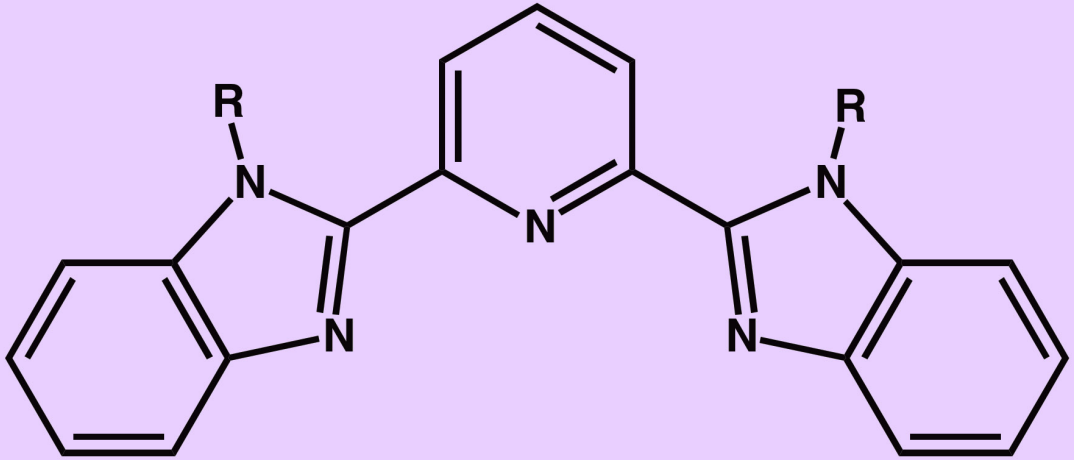
Planar, monoanionic, N3-tridentate, strong-field.

Also 4'-*n*propyl, add steric CH_3's at 6'-positions.

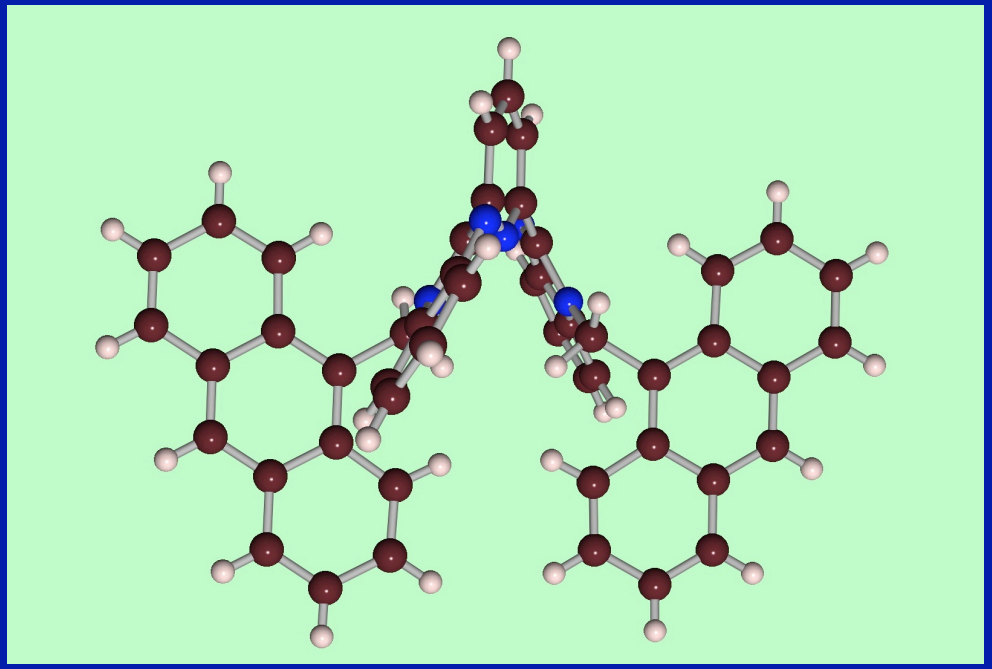
Elvidge/Linstead (1952); Gagné/Siegl (1977); Addison & Burke (1983); Crutchley (1993); Wicholas, Deutschländer (2000's)



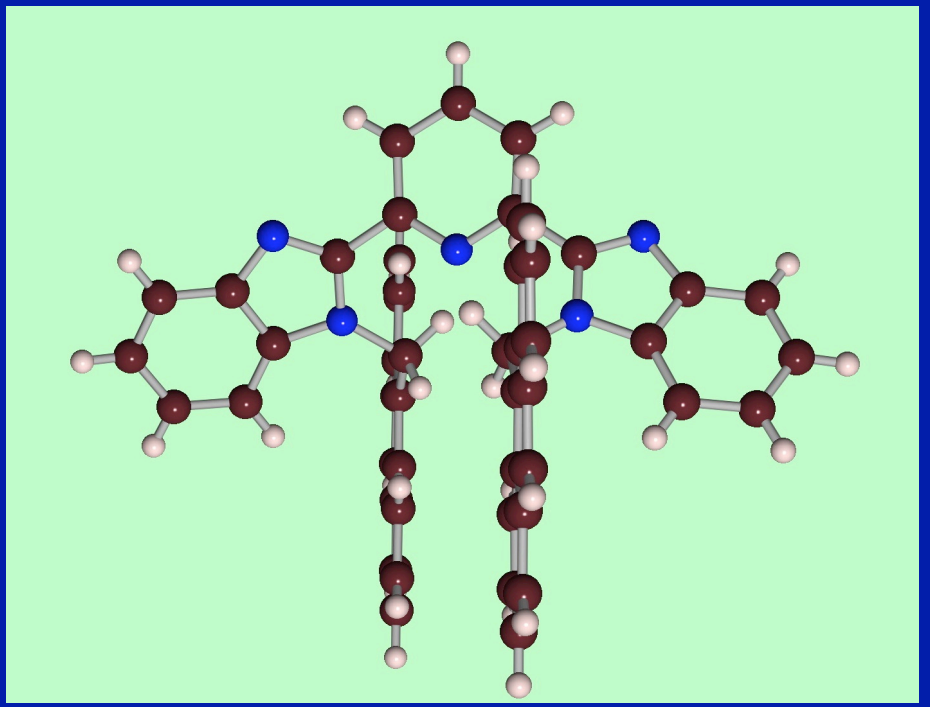
Bzimpy



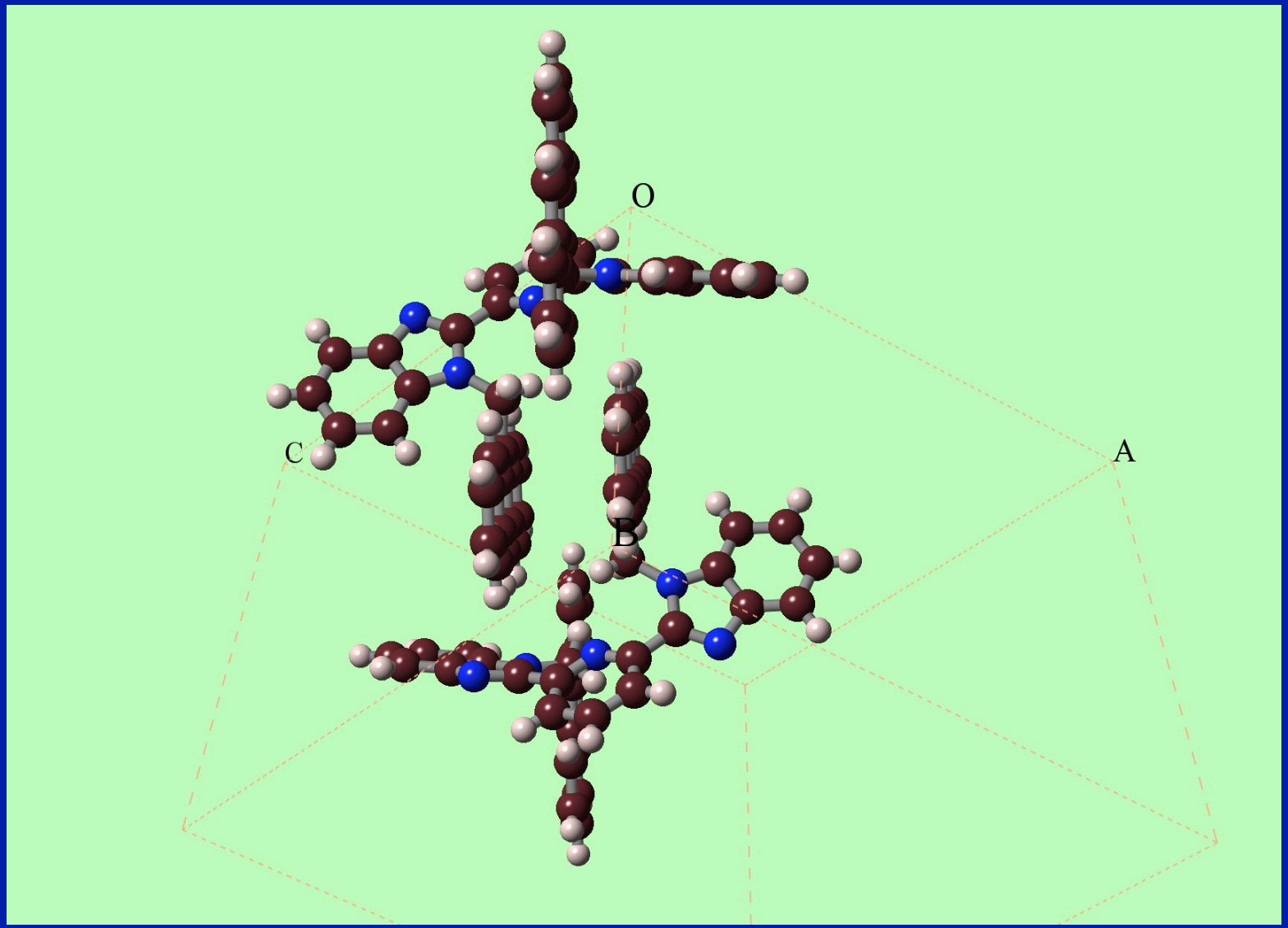
***N*-Substituted Bzimpys - choose something nice ...**



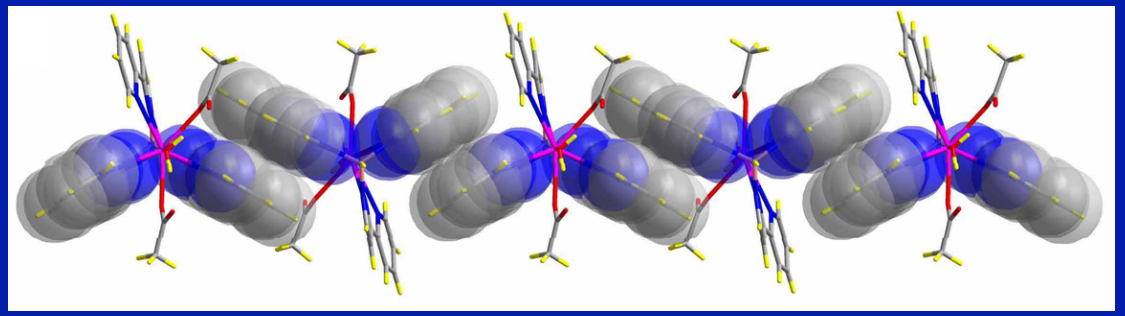
Anthracenylmethyls work ...



…. with Bzimpy unit.



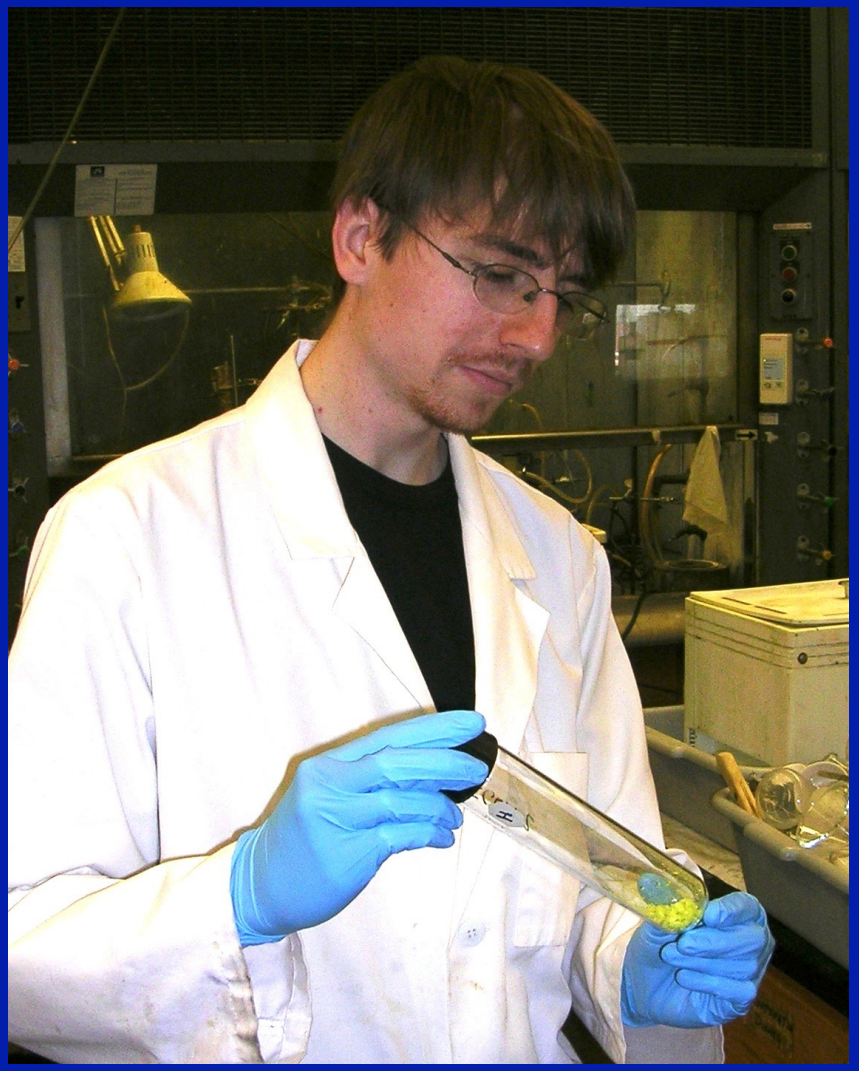
π-Stacked molecules

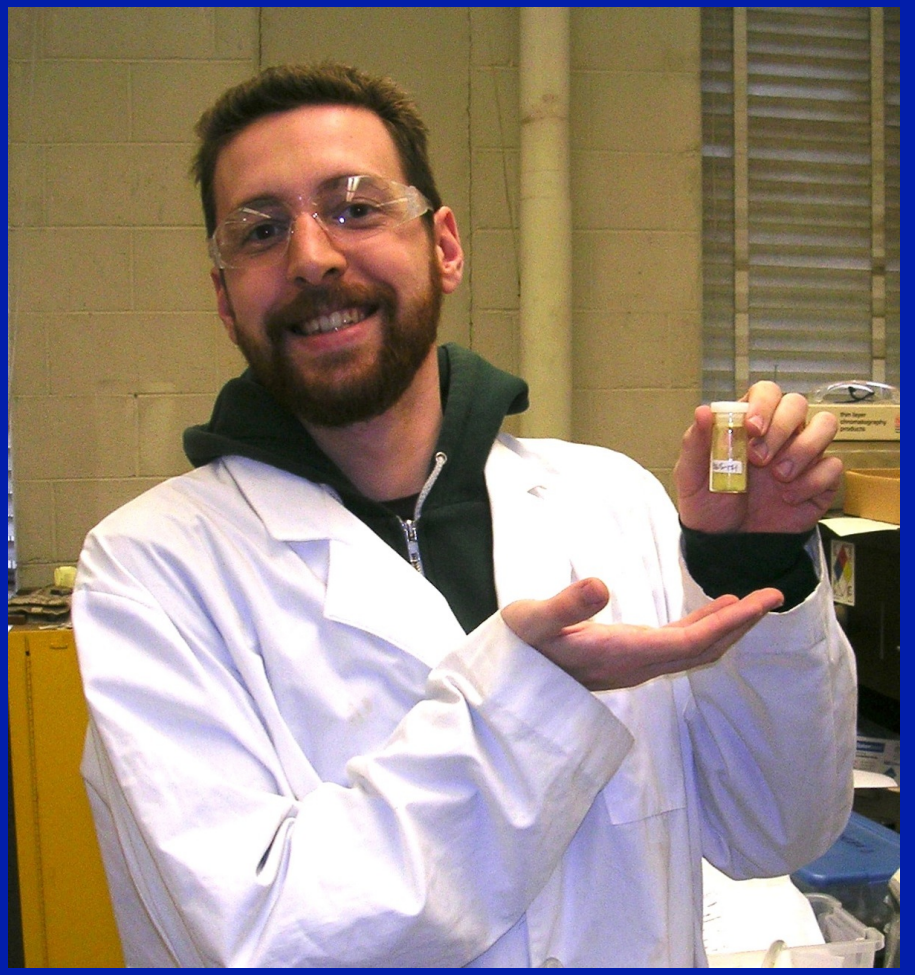


Eu/Tb p-stacks conduct energy ...

emit Vis when UV-excited

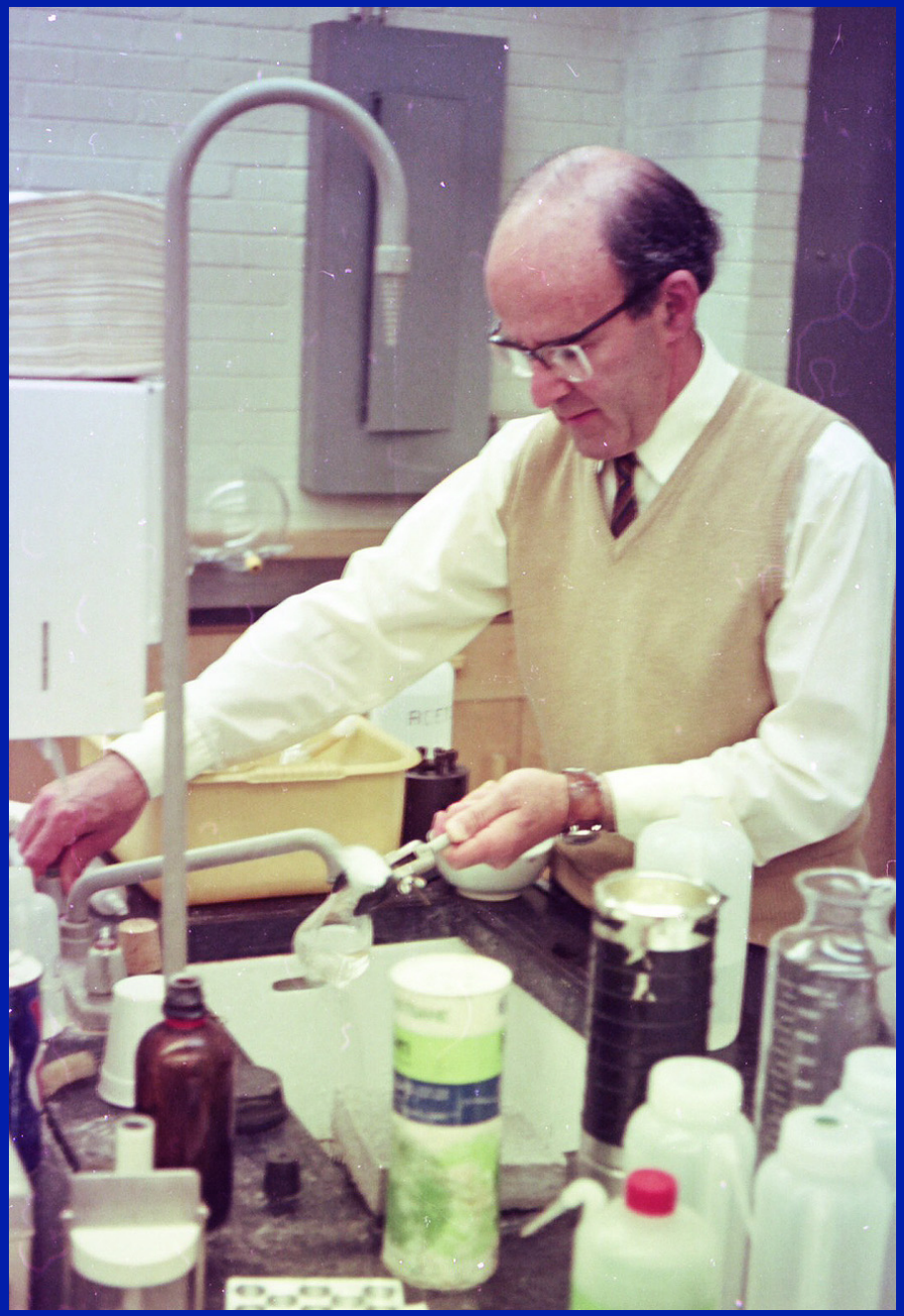
.. act as ‘superantenna’





2014 lab rats – Eric & Adam - dressed for the job !

Two more lab rats, you might recognize .....



Max in AddisonLab.

Glasses? √

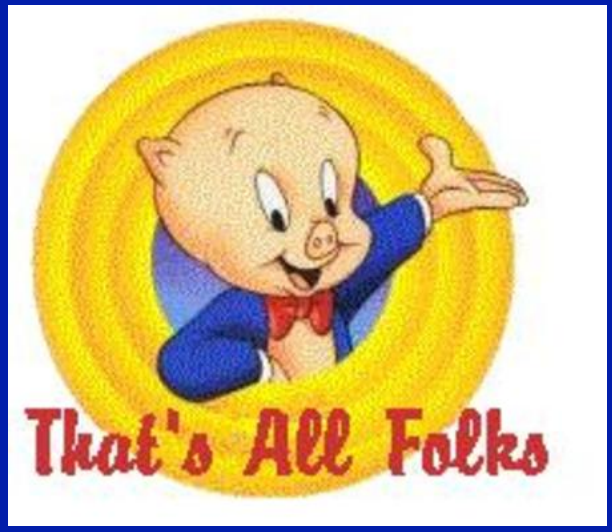
Gloves ? X

Lab coat? X

One of his students,
Frank, became known ...

Some undergrad projects:

- Inorganic synthesis and characterisation: preparation and properties of luminescent metal complexes of platinum group and lanthanide metal ions.
- Is the "real" potential of the Ni(II)/Ni electrode the same as shown in textbook tables ?
- Organic explorations: methods for preparation of new *N*-alkylated *o*-phenylenediamines for synthesis of new benzimidazoles.
- Inorganic synthesis and characterisation: new metal complexes from chelating benzimidazole-derived ligands.
- Can one make a cytochrome-*c* heme thiolate chemically, rather than by molecular biology/protein engineering ?
- Do iridium salts induce the photo/electro-oxidation of water, or just catalyze the decomposition of periodate ?


That's All Folks