Regione Emilia-Romagna

SPINNER 2013
PERSONE AL FUTURO

http://www.spinner.it/

Spinner 2013 per i Dottorati di Ricerca

!!!! 4 PhD positions available on **crystallography** and **computational chemistry** granted by Regione Emilia Romagna

Optimization of the crystalline forms of drugs in relation to activity, bioavailability, patentability and to the design of polymorphs, solvates, co-crystals with green chemistry methods

The 4 projects will be carried out within the network of labs of Universities of Parma, Bologna, Ferrara, Modena

Applications from august to november 2011

Info: UNIPR alessia.bacchi@unipr.it
UNIBO fabrizia.grepioni@unibo.it
UNIFE paola.gilli@unife.it
UNIMORE mariacristina.menziani@unimore.it

Details: http://www.cristallografia.org/uploaded/217.pdf

Ottimizzazione delle forme molecolari e cristalline di farmaci, fitofarmaci, pesticidi in relazione ad attività, biodisponibilità, aspetti brevettuali, e alla produzione di polimorfi, solvati e co-cristalli con metodi a basso impatto ambientale

I protagonisti

UNIVERSITÀ DEGLI STUDI DI PARMA

Davide Capucci

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Saverio Nanna

UNIMORE
UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Davide Presti

Università di Ferrara
fondata nel 1391

Aleksandar Cvetkovski

Aleksandar Cvetkovski

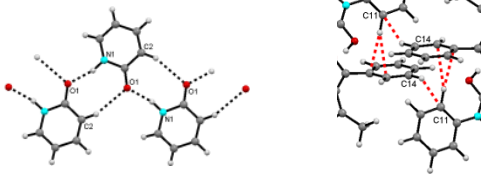
Università di Ferrara
fondata nel 1391

Università di Ferrara
Dipartimento di Chimica e
Centro di Strutturistica Diffrattometrica

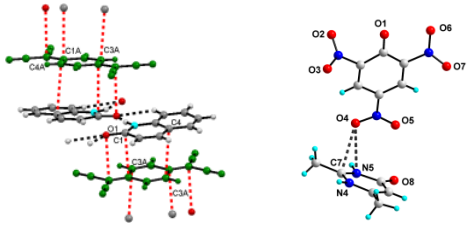
Expertise and Know-How of the Lab (since 1989)

Physical Chemistry and Crystallography of Intermolecular Interactions

► ***Hydrogen Bond***



► ***Charge-Transfer Interactions***

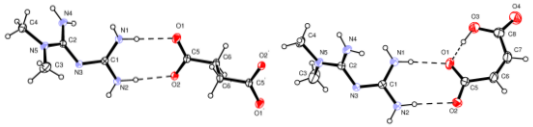


Applications to the Design of Multicomponent Crystals

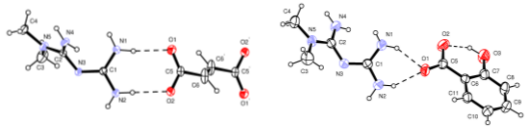
► ***New Molecular Materials***

► ***Pharmaceutical Cocrystals***

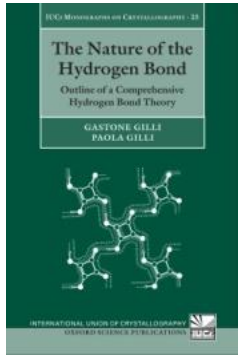
Case Study: Cocrystals of model drug "Met" with carboxylic acids

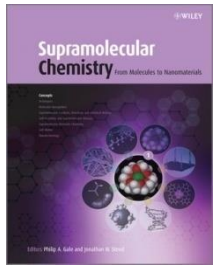


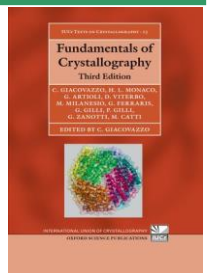
"Met" / Succinic acid "Met" / Maleic acid



"Met" / Fumaric acid "Met" / Salicylic acid







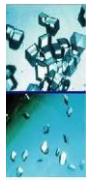
www.ggilli.com
The Dual Hydrogen Bond

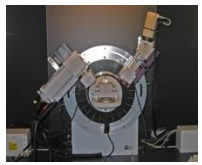
Advantages of Crystal Design

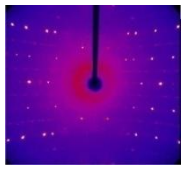
-Improved properties (*solubility, stability, bioavailability etc.)*
- Patent Protecting (*issuing new patents, market-extended product lifecycle*)
-Resolution of optically active crystal forms (*drugs, pesticides, etc.*)
- Bottom-up synthesis (*green chemistry, environmentally friendly*)

Research Facilities

- *Crystallization*
- *Diffraction*
- *Databases*
- *Modeling*







NIST National Institute of Standards and Technology

Collaborations with SPINNER network

► ***Methods of crystal preparation***
► ***Advanced carachterization***