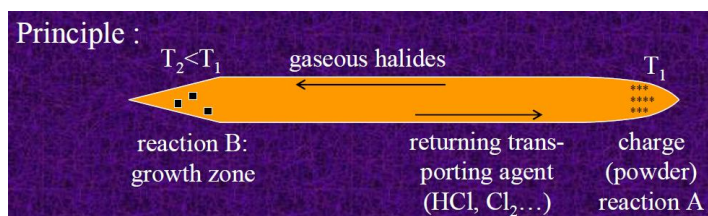


Subject proposal for Erasmus students in Chemistry

Prospection for new inorganic compounds using atypical synthesis routes

Nowadays, the contribution to the prospection for new inorganic compounds, at the basis of novel properties is in a critical position. This aspect has been largely neglected against more “profitable” studies on dedicated materials : -for energy, -for electronics, for nuclear etc..., which unfortunately essentially consist in optimizing competitive materials, and therefore do not provide new structural architectures, without preconceived ideas about their properties.

In this context, The Solid State Chemistry group from the Catalysis and Solid State Chemistry Laboratory (UCCS), want to elaborate novel inorganic compounds via an original synthesis approach using a typical selected routes. Particularly, our approach will focus on the use of the chemical vapor transport technique, flow growth techniques or heating of precursors using an induction furnace.



Principle of CVT synthesis (ref P.

Strobel)

Obtained compounds will be studied thanks to diffraction techniques (X-Ray or electron) on powder or single crystals. The innovative electron crystallography technique may be used to solve crystal structures.

Key words: synthesis, CVT, fluw growth techniques, solid state chemistry, X-Ray diffraction and electron microscopy.

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