



Name: Yannicke DAUPHIN

Position: Assistant professor

Institution: Geology, Université Paris 6

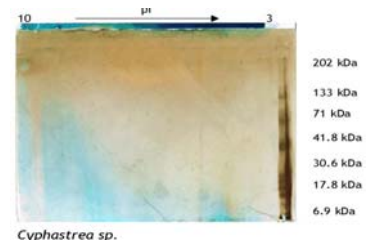
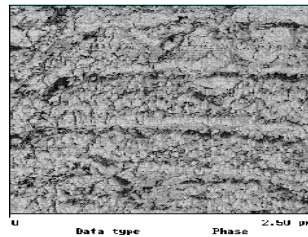
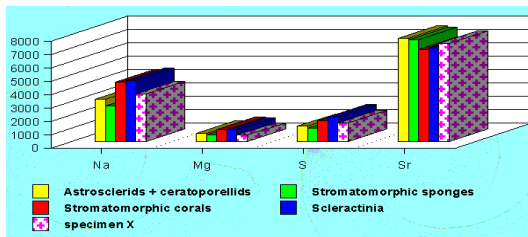
Education: Ph. D. Université Paris XI – palaeontology 1973, doctor thesis Université Paris XI – palaeontology 1983

Research areas:

My research focuses on Biomineralization, the formation of minerals by organisms, a widespread phenomenon in fossil and recent ages. The skeletons of organisms have been used and are used mainly for morphological studies, the aim of which are systematic and/or phylogenetic reconstruction. However, morphological characters are only a small part of the data present in skeletons. These organo-mineral hard parts contain a lot of characteristics which are useful for systematics, phylogenetics or palaeo-environmental reconstructions.

Knowledge of the organic matrices contained in carbonate skeletal systems will ultimately dictate our understanding of the role of individual components in process of biomineralization, organic degradation, and diagenesis. The aim of my research is to investigate the mechanisms by which shells are preserved in fossil sites. Several areas are currently being explored. These include the investigation of the microstructure, mineralogy, chemical contents of the mineral and organic phases in recent and fossil shells.

The commonly used analytical techniques are SEM and AFM, EDS analyses, fluorescence, infrared spectroscopy, XANES and the full range of biochemical procedures for purifying and analyzing glycoproteins.



From left to right:

Elemental contents of aragonitic triassic fossils

AFM phase image of a section of a nacreous layer

2D electrophoresis of the soluble organic matrices extracted from a coral skeleton
