1. Objectives

The main research objective of the GRC Sedimentary Geology is the reconstruction of the space-temporal evolution of sedimentary basins, integrating studies on sedimentary evolution, sedimentary processes, diagenesis, paleobiology and biostratigraphy. In addition to basic research, the results obtained by this group have applications for oil exploration and mining industry as well as for other fields like civil engineering, water resources, paleoclimate research, among others.

2. Research areas and Scientist in charge

- Basin evolution and sedimentary model (Dr Ramon Salas, ramosalas@ub.edu)
- Sedimentology and geochemistry of evaporitic deposits (Dra Laura Rosell, lrosell@ub.edu)
- Oil geochemistry and organic petrology (Dr Albert Permanyer, albert.permanyer@ub.edu)
- Geofluids: diagenesis and fluid migration (Dr Anna Travé, atrave@ub.edu)
- Paleobiology and biostratigraphy of non-marine environments (Dr Carles Martín-Closas, cmartinclosas@ub.edu)
- Paleontologia dels medis marins (Dr Carles Ferràndez, carlesferrandez@ub.edu)

3. Capacities

- Conceptual and numerical depositional models of carbonate platforms in the Lower Cretaceous of the Iberian Chain.
- Isotopic chemiostratigraphy for the identification of the Oceanic Anoxic Event OAE 1a in the Eastern Iberian Chain.
- Depositional models of evaporitic formations. Evaporitic paragenesis and clays in continental environments.
- Diagenetic cycle of calcium sulphate in geological domains with important deformation. Fractures and cements in evaporitic deposits.
- Elemental and isotopic geochemistry and geophysical properties of sulphates and chlorides.
- Source rocks and their correlation with oils.
- FTIR Spectroscopy and UV Fluorescence.
- Biodegradation of oils in oxic environments.
- Biostratigraphy of non-marine formations (Cretaceous and Tertiary) with charophytes.
- Biostratigraphic-palaeobiogeographic models for long distance correlation of non-marine formations.
- Palaeobiological models of terrestrial communities with insects and angiosperms in the Lower Cretaceous amber of Spain.
4. Teaching

- Master in Reservoir Geology and Geophysics (Universitat de Barcelona-Universitat Autònoma de Barcelona)
- Master in Palaeontology (Universitat de Barcelona-Universitat Autònoma de Barcelona)
- Master in Cultural Heritage and Museology (Universitat de Barcelona)
- Field-trips on the characterization of oil source rocks and their relationships with basin evolution

5. Selected papers


6. Selected competitive projects


7. Selected private contracts

- Depositional models of the Upper Oligocene - Lower Miocene carbonate ramps from the Falcón Basin (Venezuela) as outcrop analogs for oil reservoir modeling. Repsol Exploración, S.A.
- Diagenetic study of cements from Dulaan Uul (Mongolie). Areva NC. Evaluation of Shale Gas & Oil Potential in the Palaeo-Proterozoic McArthur Basin, Northern Territory, Australia. Imperial Oil & Gas Project Pty Ltd.
- Fault-related dolomites in Benicassim-Orpesa area. Understanding the dolomitization process and implications for the reservoir properties of the rocks and fault zones. ExxonMobil Global Services Company.
- Microbial carbonates analogs for hydrocarbon reservoir characterization. Repsol Exploración, S.A.
- Origin and distribution of cements in the platform facies of Shuaiba formation. Maersk Oil Qatar.
- Oligocene-Miocene red-algal limestones of the Prebetic domain (SE Spain) Repsol Exploración, S.A.
- Petrological and geochemical characterization of the Navarra potash basin. Geoalcali S.L.
- The Annot sandstones. Relationships between diagenesis and compressional tectonics. TOTAL.
- The Pre-Messinian anoxic sedimentation in southeastern Iberia. Repsol Exploración, S.A.