UNIVERSITÀ DEGLI STUDI DI PAVIA
DIPARTIMENTO DI SCIENZE DELLA TERRA E DELL'AMBIENTE

FORM PER PROGETTI BANDO DOTTORATO XXXIII CICLO

Project title

Inorganic Geochemistry to Improve Source Rock Evaluation - IGISRE

Proposer

Surname	**Sanfilippo**
Name	**Alessio**

Research Unit

Surname	Name	Institution
Previde Massara	Elisabetta	(GEOLAB, Eni)
Scotti	Paolo	(GEOLAB, Eni)

Abstract

The IGISRE project aims to improve the evaluation of the original source rock properties by combining organic and inorganic geochemical parameters. A correct evaluation of the source rock parameters is of paramount importance for the success of any exploration initiative. In this frame, we seek to develop new geochemical tools able to reduce the uncertainty in the definition of the original naphthogenic parameters (TOC_O and HI_O) of a source rock by combining well-known organic parameters with inorganic geochemical tools, such as minor and trace element compositions of the source rock and/or of the mineral constituents.
The project is articulated in three main periods:

1) **Literature study aimed at acquiring the state of the art on source rock geochemistry, and systematic screening dedicated to constrain the relationship between organic and inorganic geochemistry for immature source rocks;**
2) **Validation of the models reported in the literature and acquisition of new geochemical data (bulk rock and *in-situ* geochemical analyses) on Eni study-cases (Anisian-Ladinian successions; Southern Alps) comprising immature, mature and over mature source rocks.**
3) **Selection of the most significant inorganic parameters for source rock evaluation and application of the results to other Eni study-cases, with emphasis for well successions.**

This project will contribute to increase the reliability of basin and petroleum system modeling and to reduce exploration risk.