

Following the invitation of Prof. Barabara Cavalazzi, I went for a short visit at the Lab. of Astrobiology and Geomicrobiology from Dept. of Biological, Geological and Environmental Sciences – BiGeA, University of Bologna, Italy. The general aim of this visit was to start a new collaboration to assess the potential of EPR (Electron Paramagnetic Resonance) spectroscopy in early life and astrobiological research. We intend to start investigating, using EPR, carbonaceous matter (CM) with an age of 3.5 to 3 billion years in rock samples from South Africa.

The first part of the discussion was dedicated to a presentation of the main research interests of the group of prof. Cavalazzi, followed by a presentation of our EPR group in the Institute of Materials Physics, Romania, and of the potential of the EPR spectroscopy applied in the study of primitive CM. After this round-table discussions, we concentrated our efforts in selecting the appropriate samples to be tested later with EPR spectroscopy in Romania. This part of the visit was the most important and beneficial, as this activity required the presence and skills of both EPR and host laboratory experts. I was strongly involved in this stage, discussing the sample preparation according to the instrumental needs of EPR. Taking into account the specific needs for EPR experiments, we have defined a protocol for sample preparation. The selected samples will be prepared in Bologna, and will be characterized in terms of microfacies and chemical composition before sending them to our EPR lab in Romania. We have also visited the host laboratory, including the sample preparation facility.

Another important aspect of the visit was the discussion regarding common interests in the framework of a future collaborative project to be submitted to national and international calls after gathering preliminary results, starting with CERIC-ERIC calls. Also, we look forward to disseminate/publish our research results in international conferences and journals, which will constitute a support for further applications for EU funding.