Contribution ID: **11** Type: **POSTER**

SPECTROSCOPIC AND MINERAL MAGNETIC STUDIES ON SOME ANCIENT POTTERY SAMPLES

57Fe Mössbauer absorption spectra and Fourier Transform Infrared spectra (FTIR) were recorded for archaeological pottery samples obtained from the excavated site of Nedungur [Lat.10° 57'N; Long.77°51'E]. The physical and chemical state of iron (Fe2+/Fe3+) and iron oxide phases obtained using Mössbauer spectra were used to establish the temperature and atmosphere of firing and also to correlate the color of the sample. The clay mineral type and its structural deformation due to firing were established using Fourier Transform Infrared spectra. The mineral types and domain states of the constituent magnetic fine particles were elucidated using variation of susceptibility at various frequency and temperature under low field. An attempt has also been made to correlate the magnetic parameters from the percentage of Fe2+/Fe3+ and iron oxides. The information obtained paves a way for a better understanding of the technological development that took place in the ancient past and also the suitability of the samples for determination of reliable ancient geomagnetic field intensity values.

Keywords: FTIR, XRD, Mössbauer, Magnetic properties, Pottery shreds.

Are you a student, a delegate from developing countries or a participant with physical needs and would like to apply for a sponsored accomodation. Please answer with yes or no.

Delegate from developing country and would like to apply for sponsored accomodation

Primary author: Dr RAMDOSS, venkatachalapathy (Annamalai University)

Co-authors: Dr NATHANI, Basavaiah (Indian Institute of Geomagnetism, New Panvel, Navi Mumbai- 410 218, India.); Dr CHELLACHAMY, Manoharan (Annamalai University, Annamalainagar-60802, Tamilnadu,INDIA); Mrs SRINIVASAN, Vasanthi (State Archaeology Department,Tamilnadu, INDIA); Dr KASINATHAN, Veeramuthu (Annamalai University, Annamalainagar-608002, Tamilnadu,INDIA)

Presenter: Dr RAMDOSS, venkatachalapathy (Annamalai University)

Track Classification: Magnetism and Magnetic materials - Bulk and thin layers