

## NAA and XRF techniques to investigate artistic paints

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In this study, the multielemental characterization of artistic blue paints from the 90's and currently available ones in the Brazilian market was carried out using the Energy Dispersion X-Ray Fluorescence (EDXRF) and Neutron Activation Analysis techniques (NAA). These results aim to establish a reference database in the field. The EDXRF measurements was performed using portable X-ray spectrometer with Ag X-ray tube associated with a Si Drift detector (25 mm<sup>2</sup> x 500 µm) with Be window (12.5 µm). The artistic paint samples were irradiated for 300 s using 30 kV and 5µA excitation. The quantitative analysis was performed using WinQXas software program (IAEA, version 1.3). The NAA measurements were performed in the nuclear reactor IEA-R1 (3.5-4.5MW, pool type) at IPEN/CNEN-SP. Each sample was irradiated from minutes to hours and gamma counting was performed using HPGe detector (ORTEC-GEM 60195) coupled to an MCA (ORTEC - 919E). Concentration of all elements was obtained using the *ATIVAÇÃO* software. The results obtained by both techniques are in good agreement, in addition to being complementary. However, they do not correspond to the elemental content description provided by the manufacturer.