

Moroccan traditional women use, since still, the natural products for their beauty, like Henna (plants), kohl and clays (minerals).

Indeed, a various selected plants mixed with the Henna are used like mask for hairs in order to treat and to soften them, the kohl are prepared from some minerals and the green clays have a vast number of applications like a mask or shampooing for hairs and as a product for the mineral salt contribution for their body by eating.

The last application of clay has been the main motivation for the present study, in order to characterize and to valorise this mineral.

For the characterisation, a various techniques are used, like X-ray diffraction, Infra red, Raman and thermo-gravimetric analysis and a comparative study is done for European pharmaceutical clays.

The obtained results allow us to make a direct comparison between the tow clays: traditional and pharmaceutical one. These researches must be deepening in order to valorise this mineral.

**Keywords:** natural products; moroccan clays; beauty

#### FA2-MS03-P06

**XRF and DRX Analysis of Numide Archaeological Coin.** Mousser Henia<sup>a</sup>, Madani Abdelghani<sup>a</sup>, Amri Redha<sup>a</sup>, Mousser Abdelhamid<sup>b</sup>, Darchen Andre<sup>c</sup>. <sup>a</sup>Département de Chimie Industrielle, Université Mentouri Constantine, Algérie. <sup>b</sup>Département de Chimie, Université Mentouri Constantine, Algérie. <sup>c</sup>Laboratoire d'électrochimie, Ecole Nationale Supérieure de Chimie de Rennes, France.

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The thorough knowledge of a work of art or an archaeological object, under its various aspects, like the structure or the chemical composition of constitutive materials is a precondition to any applied research, in industry, in history of art or in archaeology, like with any intervention in conservation or restoration. Museum CIRTA of the town of Constantine has a collection of more than 35000 coins and statuettes going back to Numide, Roman, Republican, Vandal and Byzantine times. On the coins are struck the name of the cities, of the kingdoms and the empires. This work is a contribution of microchemical surface study of a Numide coin (Algeria between 3rd and 2nd century before Jesus Christ). Photography, energy dispersive fluorescence spectrometry (XRF) and x-ray diffraction (DRX) were used. Photography shows the effigy of the king *Massinissa*. XRF analysis gives 99.9% of lead. The DRX identifies Lead element and two corrosion products Litharge (PbO) and Hydrocerussite (Pb<sub>3</sub>(CO<sub>3</sub>)<sub>2</sub>(OH)<sub>2</sub>).

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**Keywords:** XRF; DRX; lead; archaeology

#### FA2-MS03-P07

**Beauty of Symmetries in Carpet of Babar (Khenchela-Algeria).** Nourredine Benali-Cherif. *Laboratoire des Structures, Propriétés et Interactions Inter Atomiques (LASPPA). Institut des Sciences et Technologie. Centre Universitaire de Khenchela 40000, Algérie.*

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Babar city perched on a knoll south of Khenchela city-Algeria, in the heart of the Aures, famous for its traditional carpets, an immeasurable beauty in bright colors and generous, reflecting the true picture of the Chaoui tribes who live the region. The carpet (Zarbia) color red dominant *Dem El Ghzal* (blood gazelle) includes geometric patterns of Berber origin. All the beauty of these carpets made by women (three months for a carpet 3x2 m) is in the symmetries. Rotational and rotoinversion axis, inversion centers, mirror planes adorn this carpet and make it a unique model, synonymous with the pride of the people in my hometown.

**Keywords:** symmetry; art; crystallography