

Interpretation of Islamic pottery ' s Luster , according to Nano Technology Applications

Research summery

Painting with mineral colors on Islamic Pottery is considered as a major contribution , that achieving the meaning of ceramic eminence , removing its materialistic features , and donating things spirit values .

Fatimid period was the golden age for painting on Islamic pottery. Some Ceramics painters imagine that making metallic Luster is an easy matter, by releasing Carbon gases that reduced the metallic oxides from colors. But , Luster making is much more complicated process.

Theoretical tests for Luster optical properties had been made , to prove the role of surface building in the coloring process. This interpretation depended on :the ratio between Copper & Silver , particle size , particle size density , Kind of the used glaze for applying decoration on. That gave good results for observed colors in light scattering.

During the study of particle size effect on surface building , two systems were characterized , depending on nano-particle size range :

–Small particles that is smaller than light wavelength,with diameter less than50nm.

–Bigger particles with particle size near to the light wavelength, more or equal 50nm.

This system – consequently – has a role in absorbing the light beam, as the surface stored power is related with the collected charges in surface. Also, the particles ' shape has an effect – must take in consideration –on coloring interpenetration phenomenon.

Studying Luster ceramics with clarifications according to partial multi layers construction, showing that : Layers interpretation has an obvious effect on metallic Luster's color , and on coloring changes from blue to green.