bands in the violet and the blue/green transition zone, which can be assigned to Fe. The refraction index of some gemstones, measured with a Standard refractometer, is 1.78. The gemstones are isotropic.

The X-Ray diffraction and X-Ray fluorescence analyses on the pendant inner side showed only Au lines. No traces of other elements such as Ag, Te, Cu, Hg, Sb, Pt, Sn, which might allow tracing the origin of the gold, were seen. The pendant face containing gemstones additionally produced Fe lines. The Raman spectroscopy analysis in respect to the gemstones shows the typical spectrum of almandine, with the 350, 500, 550 and 915 cm^{-1} bands.

Based on optical characteristics, inclusion types, as well as the XRD, XRF and Raman spectroscopy data, the gemstones from the V^{th} century AD Gepidic pendant are most likely garnet group minerals, *i.e*. almandine.

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Microchemical and microstructural characteristics of cystine (a renal stone)

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Cystine is a rare renal stone (less than 2% of the patients forming urinary stones), an organosulphur amino-acid compound with a chemical formula $(SCH_2CH(NH_2)CO_2H)_2$. Cystine stones are produced by an inherited disorder of the transport of amino acid cystine that results in excess of cystine in the urine. And thus may present a significant problem in urinary tract. Characteristic white culculi was provided by a male patient living in Kozani's area. These calculi were not previously identified, and thus was not determined as cystine stones. A comprehensive analytical study took place, employing the following analytical techniques: Electron Probe Micro-Analysis (EPMA), X-Ray Diffraction (XRD), thermal analysis (thermogravimetry TG/ Differential Thermal analysis DTA) Environmental Scanning Electron Microscopy (ESEM) coupled to a Cathodoluminescence (CL) tube. A characteristic concentric texture is clearly shown under the Electron Microprobe and the ESEM, with thick cystine layers inter-bedded with thin calcium hydroxyl-apatite layers. The elevated concentrations of sulphur are clearly shown under electron microprobe, while calcium and phosphorous prevail within the apatite regions. Characteristic hexagonal cystine crystals are observed under higher magnification. The mineralogical (XRD) analysis revealed a clear L-cystine structure (the less soluble amino-acid found in the urine). The thermal analysis revealed the characteristic endothermic peak at 248 ^oC found in L-cystine and a high amount of mass loss (90%), as expected for such an organic compound. Cathodoluminescence spectra were obtained from several areas of the stone. Some peculiar luminescence was observed on specific spots and is probably related to the cystine. Unfortunately, there are no relevant CL spectra of cystine samples found in the literature, thus preventing a comparative study. Nevertheless, our CL experiments are launching cathodoluminescence technique as a significant analytical technique for biomaterials characterization. In conclusion, our study proves that bio-geochemistry and the application of powerful analytical techniques could substantially help the medical advisors. In particular, having a thorough micro-chemical and structural analysis of an urinary stone, the medical treatment of diseases related to stone formation could be better scheduled. Knowledge of the precise stone composition may allow physicians to recommend an appropriate prophylactic therapy for the patient and thus prevent or delay the cystine stone recurrence.