

## Ultramarine, lazurite and sodalite studied by positron annihilation and EPR methods.

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### Rok wydania

1995

### Czasopismo

Acta Physica Polonica A

### Numer woluminu

88

### Strony

29-41

### DOI

10.12693/APhysPoA.88.29

### Kolekcja

Naukowa

### Język

Angielski

### Typ publikacji

Artykuł

### Streszczenie

Studies of positron annihilation accompanied by EPR technique were undertaken for sodalite and lazurite and their synthetic counterparts (synthetic sodalite and ultramarines). Results of measurements performed by two techniques of positron annihilation spectroscopy (angular correlation of annihilation radiation, ACAR, and positron annihilation lifetime) revealed the undoubted influence of free radicals on positron annihilation mechanism but both inhibition of positronium formation by them and the effect of filling cages ought to be taken into account. The distinct differences between ACAR curves for sodalites, lazurites and ultramarines probably reflect the presence of different radicals in their cages and chemical heterogeneity as well as the disorder in Al, Si-site ordering in case of ultramarines. Comparison of the results of ACAR measurements with the ones of the EPR studies indicates that there is correspondence between them. Similarly to three families of the ACAR curves, different likes of EPR lines were obtained for three groups of samples; sodalites, lazurites and ultramarines. It is possible that the annihilation of positrons takes place mainly with unpaired electrons recorded by the EPR technique.

### Adres publiczny

[https://doi.org/ 10.12693/APhysPoA.88.29](https://doi.org/10.12693/APhysPoA.88.29)

### Strona internetowa wydawcy

<http://www.ifpan.edu.pl>