



IX.IXth
SERAMİK CERAMİK
KONGRESİ CONGRESS
2015 2015



KATILIM BELGESİ

Sayın

Gökhan AÇIKBAŞ

Türk Seramik Derneği ve Afyon Kocatepe Üniversitesi İşbirliği ile
26-28 Kasım 2015 Tarihlerinde Afyonkarahisar'da düzenlenen
IX. Uluslararası Katılımlı Seramik Kongresi'ne
Katılmıştır.

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Türk Seramik Derneği / Turkish Ceramic Society

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Physical and Mechanical Evaluation of Hydroxyapatite Doped with Strontium and Fluoride

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Keywords

Hydroxyapatite;
Precipitation;
Strontium;
Fluoride

Abstract

In this research, pure hydroxyapatite and hydroxyapatite doped with various amount of strontium and fluoride were synthesized by using precipitation method. The synthesized pure and doped hydroxyapatite were sintered at 1100 °C for 1 hour. Also, effect of different pH values on structural properties of pure hydroxyapatite was investigated. XRD, FTIR and RAMAN tests were applied to evaluate effect of doping elements on physical structure. SEM analysis was used to investigate morphology and grain size of pure and doped hydroxyapatite. Density of pure and doped hydroxyapatite were measured by Archimedes method. Moreover, micro-hardness test was used to evaluate hardness of synthesized pure and doped hydroxyapatite. Results showed that strontium and fluoride can be doped into hydroxyapatite.

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BS102 / Salon Sefir: 26.11.2015 Saat: 17.²⁰-17.⁴⁰

Development of Antimicrobial Effect on Ceramic Surfaces

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Keywords

Biosidal
Antimicrobial
Molecular Barrier,
Surface coating,
Antimicrobial
effect,
Characterization

Abstract

As industrially concerned, Biosidal Antimicrobial Molecular Barrier (BAMB) is known to provide antimicrobial effect on the surfaces it is applied, however, there is a lack of scientific reports about the subject in the literature. In this study, in order to impart an antimicrobial surface property on ceramic surfaces, BAMB solution was applied on gloss fired ceramic wall tile substrates and the surface antimicrobial activity results were compared with that of plain wall tiles (without BAMB application). The ceramic surfaces were cleaned, and stove dried prior to spray coating by BAMB. The coated substrates were dried in the ambient. The inactivity of the coatings was checked with the bromophenol blue test. The microstructural and molecular characterization of the BAMB coated surfaces were carried out with SEM imaging and surface FTIR, respectively. The antimicrobial activity test of the surfaces were conducted according to ASTM 2180 (standard test method for determining the activity of incorporated antimicrobial agent in polymeric hydrophobic materials) with *Staphylococcus aureus* (ATCC 6538) and *Pseudomonas aeruginosa* (ATCC 15442) bacteria. The BAMB coated surfaces showed less flocculent bacterial growth in comparison to uncoated ceramic surfaces and it was determined that BAMB improved the antimicrobial property.

Acknowledgement: The study was financially supported by Bilecik Seyh Edebali University, Scientific Research Projects Fund (Project number: 2012-01-BIL.03-03)

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