



1st INTERNATIONAL
BLACK SEA CONGRESS ON
ENVIRONMENTAL SCIENCES
(1st IBCESS)

ABSTRACT BOOK
August 31-September 03, 2016



CHEMICAL COMPOSITION OF ATMOSPHERIC AEROSOL AT THE WESTERN BLACK SEA ATMOSPHERE Deniz G. Tokgöz, İlker Balçılar, Güray Doğan, Ali İhsan İlhan, Tulay Balta and Gürdal Tuncel.....	27
REMEDICATION OF BORON POLLUTION WITH POPLAR AND GENE REGULATION NETWORK BEHIND BORON TOXICITY TOLERANCE Kubilay Yıldırım.....	28
BIOPLASTIC WASTE MANAGEMENT Ezgi Bezirhan Arıkan and Havva Duygu Özsoy.....	29
DYE ELIMINATION CAPACITY OF A NOVEL PHYCO-COMPOSITE BIOSORBENT FROM AQUATIC MEDIUM Fatih DENİZ and Elif TEZEL ERSANLI.....	30
BIOPLASTIC AS A NEW GENERATION BIOMATERIAL H. Duygu Özsoy and Selin Sarca.....	31
ESTIMATION OF DAILY SUSPENDED SEDIMENT LOAD WITH AN ARTIFICIAL NEURAL NETWORK Banu Yılmaz, Egemen Aras and Sinan Nacar.....	32
TEMPORAL VARIATIONS OF EASTERN BLACK SEA AEROSOL İlker Balçılar, Abdullah Zararsız, Yakup Kalaycı, Güray Doğan and Gürdal Tuncel.....	33
NOISE MAPPING OF SHOPPING CENTERS IN TRABZON Ahmet Alci, Miraç Murat, Şükrü Özşahin and Coşkun Hamzacebi.....	34
EFFECT OF CHESTNUT AND GLASS POWDER ON SOME PHYSICAL AND MECHANICAL PROPERTIES OF POLYESTER COMPOSITES Gokdai Duygu, Akpınar Borazan Alev and Acikbas Gökhan.....	35
DATA-DRIVEN SIMULATIONS OF STREAM METABOLISM USING DIEL OXYGEN TECHNIQUE Miraç Eryiğit, Nusret Karakaya and Fatih Evrendilek.....	36
APPLICATION OF A LOCAL FUNGAL AGENT ON MAIZE SEEDLINGS TO IMPROVE DROUGHT STRESS TOLERANCE Necla Pehlivan, Neslihan Saruhan Guler, Sengul Alpay Karaoglu, Sule Guzel and Arif Bozdeveci.....	37
THE EFFECTS ON MISUSE OF AGRICULTURAL LANDS ON ENVIRONMENT Erdal Dağistan, Aybüke Kaya and Dilek Bostan Budak.....	38



EFFECT OF CHESTNUT AND GLASS POWDER ON SOME PHYSICAL AND MECHANICAL PROPERTIES OF POLYESTER COMPOSITES

Gokdai Duygu¹, Akpınar Borazan Alev¹ and Acikbas Gökhan²

¹Bilecik Seyh Edebali University Chemical and Process Engineering Department,
Bilecik, Turkey

²Vocational School of the Bilecik Seyh Edebali University,
Metallurgy Program, Bilecik, Turkey
alev.akpinar@bilecik.edu.tr

Natural resources decrease due to the increase of world population and consumption. Therefore, it is necessary to use of our natural resources in a more efficient manner. Glass powders, the most widely used at over 90% of all reinforcements with thermoplastic or thermoset matrices, are available in many forms to produce various commercial and industrial products. All types of glass powders have high thermal resistance, low coefficient of thermal expansion, high density and insulating properties. Chestnut tree abundantly exists in the East Black Sea subsection, the Marmara region, and the Antalya coastal area via the West Anatolia subsection in Turkey. The nuts are used by confectioners, eaten roasted, and ground to make flour. In this study, polymer matrix composites were manufactured using chestnut waste and glass powder as filler and polyester as polymer matrix with casting method. Polyester: filler ratio was kept in constant and chestnut: glass powder ratios were changed. Some mechanical properties of composite materials were investigated and the final product tested to determine their flexural strength, elastic modulus, hardness as well as some physical features such as density and water absorption. The experimental results showed that increasing ratio of chestnut had led to decreasing of strength. Elastic modulus and hardness values were similar for all type of composites. Glass powder added to chestnut in a ratio of 6% caused to decreasing of strength in 18%. Ceramic phase yielded an increase of approximately 8% in the elastic modulus of the composites. Generally impact strength values were decreased with the increasing of chestnut and glass powder filler ratio in all samples. In addition impact strength of the composites filled with glass powder has lower values in comparison to composites filled with only chestnut waste.

Keywords: Polymer matrix composites, chestnut wastes, glass powder wastes, polyester, mechanical properties

Acknowledgement: This research work was supported by Bilecik Seyh Edebali University Scientific Research Project (2015-01BŞEÜ.03-06).