



## ADSORPTION OF TEXTILE DYE FROM AQUEOUS SOLUTION ONTO CHITOSAN-COATED PERLITE BEADS

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Chitosan coated perlite beads were prepared by drop wise addition of gel containing chitosan and perlite into a precipitation bath. The structure of the beads was characterized using Fourier transform infrared spectroscopy (FTIR). The surface area and microstructure of the beads were measured by BET (Brunauer, Emmett and Teller) instrument. The beads that contained chitosan enhanced the accessibility of OH and amine groups for adsorption process. Adsorption of Ostazin Black dye from aqueous solution on chitosan coated perlite beads was studied using batch adsorption technique and all parameters influencing the removal efficiency such as amount of adsorbent, pH, temperature and initial dye concentration were investigated. Adsorption of Ostazin Black ions reached equilibrium concentration in 48 hours. Experimental data were also evaluated in terms of kinetic characteristics of adsorption and it was found that adsorption process followed well pseudosecond- order kinetics. Langmuir and Freundlich isotherms were studied for the adsorption data over a concentration range of 20 to 80 mg/L. Finally, the thermodynamic parameters including, the change of free energy ( $\Delta G^\circ$ ), enthalpy ( $\Delta H^\circ$ ) and entropy ( $\Delta S^\circ$ ) of adsorption were calculated. The results showed that the adsorption of dye ions on chitosan coated perlite beads was feasible at 25–55°C.

**Keywords:** Chitosan, perlite, Ostazin Black, adsorption.

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	<p>Giresun, Turkey), Metin Deveci, Gürkan Demirkol</p> <p>Evaluation of Hazelnut Gardens in terms of Grazing</p>
	<p><b>OP62</b> <b>Mevlana Celaleddin-i Rumi Hall (Entrance floor)</b></p> <p>Yılmaz Yıldırım, Eren KARAKAVUZ (<i>Bülent Ecevit University, Zonguldak, Turkey</i>)</p> <p>Regression Modelling of Hourly Ozone Concentration in Giresun</p>
	<p><b>OP63</b> <b>Hoca Ahmed Yesevi Hall (1st floor)</b></p> <p>Dönüş GENÇER (<i>Karadeniz Technical University, Trabzon, Turkey</i>), İsmail DEMİR, Remziye NALÇACIOĞLU, Zihni DEMİRBAĞ</p> <p>Two Highly Effective Local Nucleopolyhedrovirus Isolates Against <i>Malacosoma Neustria</i> Larvae</p>
	<p><b>OP64</b> <b>Yunus Emre Hall (1st floor)</b></p> <p>Ali EROĞLU (<i>Çukurova University, Adana, Turkey</i>), Mustafa Canlı</p> <p>Response of the Osmoregulation Systems of Freshwater Fish (<i>Oreochromis niloticus</i>) Following Metal Exposures in Differing Calcium Levels</p>
	<p><b>OP65</b> <b>Hacı Bektaş-ı Veli Hall (2nd floor)</b></p> <p>İlker AKIN (<i>Selçuk University, Konya, Turkey</i>), Erhan Zor, Haluk Bingöl</p> <p>Preparation, Characterization and Application of PSf-GO/Fe<sub>3</sub>O<sub>4</sub> Composite Membrane</p>
	<p><b>OP66</b> <b>Dede Korkud Hall (2nd floor)</b></p> <p>Kadir KILINÇ (<i>Kırklareli University, Kırklareli, Turkey</i>), Saadet Gökçe Gök</p> <p>Influence of Fly Ash and Blast Furnace Slag on Compressive Strength of Alkali Activated Concrete</p>
12:30-13:30	<b>Lunch</b>
<b>September 1<sup>st</sup> Thursday Oral Session 2</b>	
13:30-13:45	<p><b>OP67</b> <b>Cengiz Aytmatov Hall (Entrance floor)</b></p> <p>Dilek BOSTAN BUDAK (<i>Çukurova University, Adana, Turkey</i>), Kasım Eren Tuna</p>

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	<p>Need of Clean and Sustainable Energy Systems in Agriculture</p>
	<p><b>OP68</b> <b>Mevlana Celaleddin-i Rumi Hall (Entrance floor)</b></p> <p>Betül Yıldırım, Fatma ESEN (<i>Uludağ University, Bursa, Turkey</i>), Yücel Taşdemir, Egemen Sakın, Burak Çalışkan, Nihan Durak, İrem Verim</p> <p>Monitoring the Changes of Temporal and Regional PAH Levels by Olive Samples</p>
	<p><b>OP69</b> <b>Hoca Ahmed Yesevi Hall (1st floor)</b></p> <p>Tülay Özer, Cüneyt Nadir Solak, İlkay Açıkgöz Erkaya, Kazım Yıldız, Abel Udo UDOH (<i>Gazi University, Ankara, Turkey</i>)</p> <p>Diversity and Ecology of Diatoms from Melen Stream (Western Blacksea River Catchment), Turkey</p>
	<p><b>OP70</b> <b>Yunus Emre Hall (1st floor)</b></p> <p>Ekrem MUTLU (<i>Kastamonu University, Kastamonu, Turkey</i>), Telat Yanık, Nicoleta Anca Sutan</p> <p>Physicochemical Analysis of Water Quality of Brook Tekeli İçi</p>
	<p><b>OP71</b> <b>Hacı Bektaş-ı Veli Hall (2nd floor)</b></p> <p>İdris SARGIN (<i>Selçuk University, Konya, Turkey</i>), Gülşin Arslan, Murat Kaya</p> <p>Novel Magnetite Loaded Chitinous Microcages Produced from Microcrustacean (<i>Daphnia longispina</i>; Water Flea) <i>Ephippia</i> for Heavy Metal Removal</p>
	<p><b>OP72</b> <b>Dede Korkud Hall (2nd floor)</b></p> <p>Sevde Üstün ODABAŞI (<i>Ondokuz Mayıs University, Samsun, Turkey</i>), Hanife Buyukgungor</p> <p>Pet Water Bottle: A Carbon Footprint Assessment</p>
13:45-14:00	<p><b>OP73</b> <b>Cengiz Aytmatov Hall (Entrance floor)</b></p> <p>Ufuk GÜLTEKİN (<i>Çukurova University, Adana, Turkey</i>), Tugce Ugur</p> <p>Climate Change and Agriculture: Threats and Way Out</p>
	<p><b>OP74</b> <b>Mevlana Celaleddin-i Rumi Hall (Entrance floor)</b></p> <p>Nihan Durak Fatma Esen, Yücel Taşdemir, Egemen SAKIN (<i>Uludağ University,</i></p>

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	<p><i>Bursa, Turkey</i>), Burak Çalışkan, İrem Verim and Betül Yıldırım</p> <p>PAH Determination by the Passive Air Sampler and Pine Components in Bursa</p>
	<p>OP75 Hoca Ahmed Yesevi Hall (1st floor)</p> <p>Nurver ALTUN (<i>Recep Tayyip Erdoğan University, Rize, Turkey</i>)</p> <p>The Effects of a Secondary Metabolites Mixture on Feeding Preference and Larval Growth of <i>Lymantria dispar</i> L. (L.Epidoptera: Lymantriidae)</p>
	<p>OP76 Yunus Emre Hall (1st floor)</p> <p>Hande OTU (<i>Çukurova University, Adana, Turkey</i>), Veli Çeliktaş, Sema Düzenli, Gülden İlbuğa, Mediha Avcı</p> <p>Some Physiological Effects of Copper on Wheat Cultivars</p>
	<p>OP77 Hacı Bektaş-ı Veli Hall (2nd floor)</p> <p>Ali Rıza DİNÇER (<i>Namık Kemal University, Tekirdağ, Turkey</i>), Yalçın Güneş, Atakan Öngen</p> <p>Comparison of Adsorption Capacity of Raw, Thermal Treated and Pyrolyzed Biological Waste Sludge</p>
	<p>OP78 Dede Korkud Hall (2nd floor)</p> <p>Coşkun ERÜZ (<i>Karadeniz Technical University, Trabzon, Turkey</i>), Koray Özşeker, Gökhan Cevahiroglu</p> <p>Solid Waste Pollution on Trabzon Coasts</p>
14:00-14:15	<p>OP79 Cengiz Aytmatov Hall (Entrance floor)</p> <p>Duygu ALTIÖK (<i>Giresun University, Giresun, Turkey</i>)</p> <p>New Approaches for Utilization of Fruit Processing Wastes and By-Products</p>
	<p>OP80 Mevlana Celaleddin-i Rumi Hall (Entrance floor)</p> <p>Yiğit TÜRE (<i>Bilecik Şeyh Edebali University, Bilecik, Turkey</i>), Emre Gürlek, Nurcan Çalış Açıkbaş, Şeref Soylu</p> <p>Chracterization of Commercial Diesel Particle Filter</p>
	<p>OP81 Hoca Ahmed Yesevi Hall (1st floor)</p> <p>Emel UZUNOĞLU KARAGÖZ (<i>Giresun University, Giresun, Turkey</i>), Ilginc</p>

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	<p>Kizilpinar Temizer, Aytac Guder, Omur Gencay Celekli, Zafer Turkmen</p> <p>Antioxidant, Antimicrobial Activities and Chemical Contents of Pollens Collected from Turkey</p>
	<p>OP82 Yunus Emre Hall (1st floor)</p> <p>Arife ŞİMŞEK (<i>Ondokuz Mayıs University, Samsun, Turkey</i>), Gülfem Bakan</p> <p>Ecotoxicological Practices of Environment Sedimentology</p>
	<p>OP83 Hacı Bektaş-ı Veli Hall (2nd floor)</p> <p>Koray ÖZŞEKER (<i>Karadeniz Technical University, Trabzon, Turkey</i>), Coskun Eruz</p> <p>Distribution of Heavy Metals in Surface Sediment from Southeastern Black Sea Lakes</p>
	<p>OP84 Dede Korkud Hall (2nd floor)</p> <p>Salih Memiş, Hakan BENEK (<i>Giresun University, Giresun, Turkey</i>)</p> <p>Green Marketing Practices at the Hospitality Businesses: New Jasmin Hotel Sample</p>
14:15-14:30	<p>OP85 Cengiz Aytmatov Hall (Entrance floor)</p> <p>Şengül ALPAY KARAOĞLU (<i>Recep Tayyip Erdoğan University, Rize, Turkey</i>), Emel Uzunalioglu, Ülkü Zeynep Üreyen, Şule Güzel, Arif Bozdeveci, Ali Bilgin</p> <p>Plant-Originated Bacillus sp. 9D Strain's Bioremediation Features and Effect on Growth of Zea Mays in the Presence of Lead</p>
	<p>OP86 Mevlana Celaleddin-i Rumi Hall (Entrance floor)</p> <p>Tayebah GOLI (<i>Middle East Technical University, Ankara, Turkey</i>), İlke Çelik, Seda Arslan, İpek İmamoglu, Gürdal Tuncel</p> <p>Trace Element Composition of Aerosol in Ankara Atmosphere</p>
	<p>OP87 Hoca Ahmed Yesevi Hall (1st floor)</p> <p>Veli ŞİMŞEK (<i>Bilecik Şeyh Edebali University, Bilecik, Turkey</i>), Zerrin Pat, Kirali Murtezaoglu</p> <p>Synthesis and Characterization of Silica Based Acidic Catalysts with the Impregnation Methods</p>

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	<p><b>OP88</b> Yunus Emre Hall (1st floor)</p> <p>Özlem ÇAKICI (<i>Ege University, İzmir, Turkey</i>)</p> <p>Toxic Effects of Carbaryl on the Pancreas of <i>Pelophylax bedriagae</i> (Anura:Ranidae)</p>
	<p><b>OP89</b> Hacı Bektaş-ı Veli Hall (2nd floor)</p> <p>Deniz AKIN ŞAHBAZ (<i>Afyon Kocatepe University, Afyon, Turkey</i>), Çağlayan Acikgoz, Burak Tasdelen</p> <p>Adsorption of Textile Dye from Aqueous Solution onto Chitosan-Coated Perlite Beads</p>
	<p><b>OP90</b> Dede Korkud Hall (2nd floor)</p> <p>Nermin BAŞARAN (<i>Düzce University, Düzce, Turkey</i>), Engin Eroğlu</p> <p>Vertical Gardens to Create Natural Effects in Indoor Landscapes</p>
14:30-14:45	<p><b>OP91</b> Cengiz Aytmatov Hall (Entrance floor)</p> <p>A. Akpınar Borazan, D. Gokdai, G. Acıkbas, Handan ÇATIR (<i>Bilecik Şeyh Edebali University, Bilecik, Turkey</i>)</p> <p>Polyester Composite Material Production Using Waste of Pet Water Bottles and Pine</p>
	<p><b>OP92</b> Mevlana Celaleddin-i Rumi Hall (Entrance floor)</p> <p>Ebru KOÇAK (<i>Middle East Technical University, Ankara, Turkey</i>), Seda Aslan Kılavuz, İpek İmamoğlu, Gürdal Tuncel</p> <p>PM2.5 Bound PAH Speciation Methods and Evaluation of Seasonal Concentrations</p>
	<p><b>OP93</b> Hoca Ahmed Yesevi Hall (1st floor)</p> <p>Nermin BAŞİ (<i>Osmaniye Korkut Ata University, Osmaniye, Turkey</i>), Dilek Bostan Budak</p> <p>Evaluation of Environmental Impact of Wind Power Plants by the People Living in that Region</p>
	<p><b>OP94</b> Yunus Emre Hall (1st floor)</p> <p>Zekeriyya BAHADIR (<i>Giresun University, Giresun, Turkey</i>), Volkan Numan Bulut,</p>



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ISBN: 978-975-01408-8-4



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