

З метою зменшення негативного впливу на навколишнє середовище та збереження водних ресурсів розроблена технологія одержання і використання нових ефективних сорбентів на основі природних алюмосилікатів. В роботі досліджено можливість використання модифікованих сапонітових глин у якості ефективних сорбційних матеріалів в процесах очищення нафтопродуктів. Проаналізовано їх детальний вуглеводневий склад та оцінено основні показники бензинів до та після очищення. Проведено порівняльний аналіз існуючої та удосконаленої технології гідрофобізації природних глинистих матеріалів. Отримані органо-мінеральні сорбційні матеріали на основі сапонітових глин можна використовувати в якості наповнювачів полімерних середовищ і пластифікаторів, а також у виробництві нафтових сорбентів.

**Ключові слова:** адсорбція, нафтопродукти, хроматографія, октанове число, сапоніт, тиск насиченої пари.

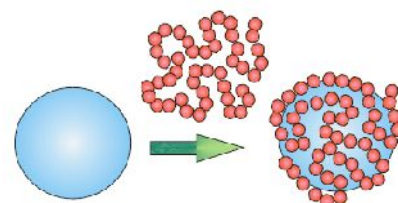
A. Y. GANZYUK  
Khmelnysky National University  
O.P. SHELESTIYK, O.M. MISHCHUK  
Khmelnysky Research-Science Forensic Centre of Ministry of Internal Affairs of Ukraine

### COMPOSITE ORGANOMINERAL ADSORBENTS BASED ON NATURAL ALUMINUM POLLUTANTS FOR PETROL CLEANING

The possibility of modified saponite clays using as efficient sorption materials in the purification processes of petroleum products. The detailed hydrocarbon analysis of treated gasoline were made. The main characteristics of gasolines treated by modified saponite sorbents was estimated by chromatography methods. The possibility of modified saponite clays using as efficient sorption materials in the purification processes of petroleum products. The detailed hydrocarbon analysis of treated gasoline were made. The main characteristics of gasolines treated by modified saponite sorbents was estimated by chromatography methods. The saponite application in the forensic research to detect trace amounts of combustible liquids as material evidence from the place of fire were confirmed. We used natural mineral sorbents of different degrees of dispersion, their activated and modified forms for cleaning of gasoline with octane number 92 resulting in increase in octane number of gasoline up to 95 and more which was determined by research and motor methods. Treatment of gasoline by sorbent was carried out for 5 min. using ultrasound system then sorbent was separated by centrifugation and settled as sediment. Sorption capacity of hydrophobic sorbents for petroleum products is from 14.4 to 16.6 g/g, sorption capacity for dissolved and emulsified petroleum is from 292 to 315 mg/g. Refined gasoline was investigated using gas chromatography with high degree of resolution. Changes in the structure of clay have been analyzed with infrared spectroscopy. Comparative analysis of the existing and improved technologies of hydrophobization of natural clay materials has been conducted. As a conclusion, the obtaining of organic-mineral sorption materials on the basis of saponite clay enables to use them as fillers of polymer environment and fluidizing agents, as well as in production of oil sorbents.

**Keywords:** adsorption, petroleum products, chromatography, octane rating, saponite, vapor pressure.

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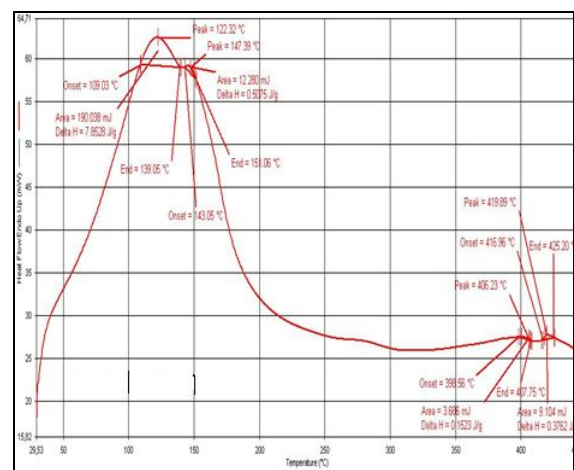
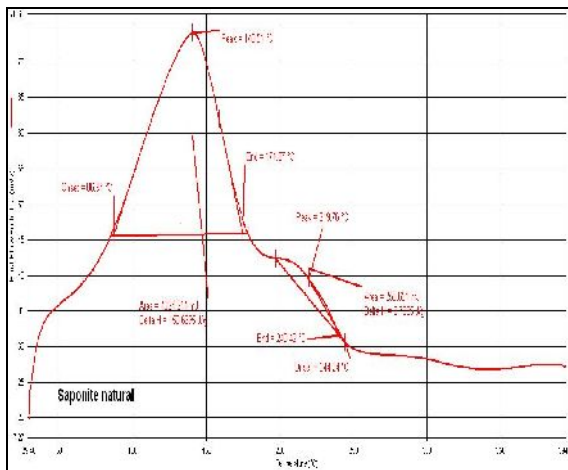
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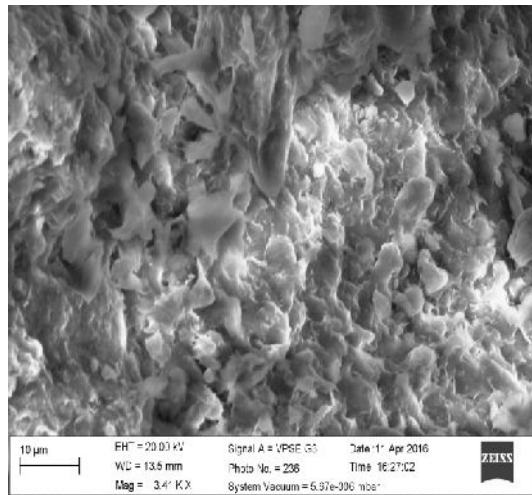
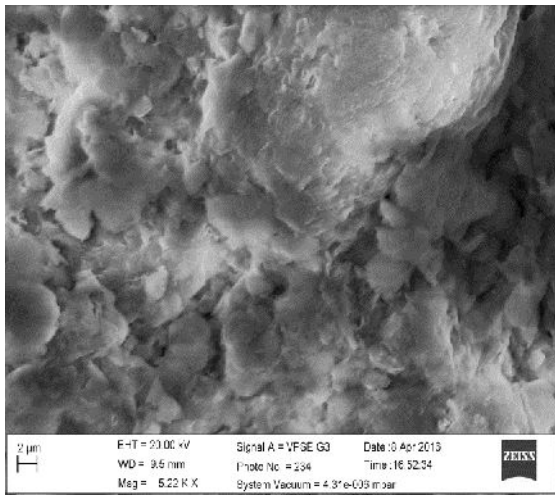
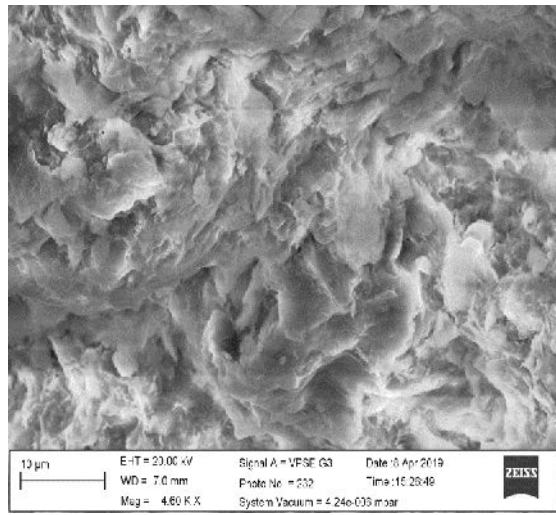
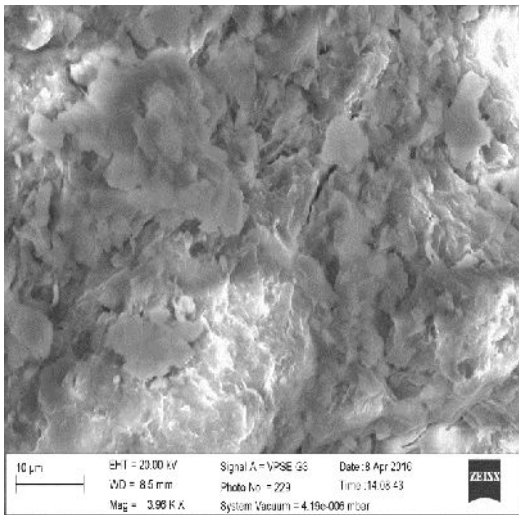
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62,45; Fe<sub>2</sub>O<sub>3</sub> – 15,04 16,68; Al<sub>2</sub>O<sub>3</sub> – 12,72 13,01 ; MgO – 4,94 6,65; TiO<sub>2</sub> – 1,64 1,91; MnO<sub>2</sub> – 0,29 0,36; V<sub>2</sub>O<sub>5</sub> – 0,1117.

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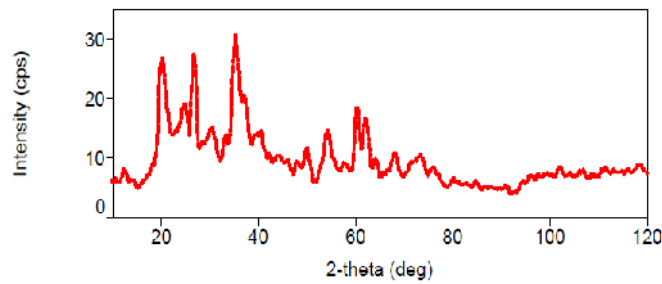


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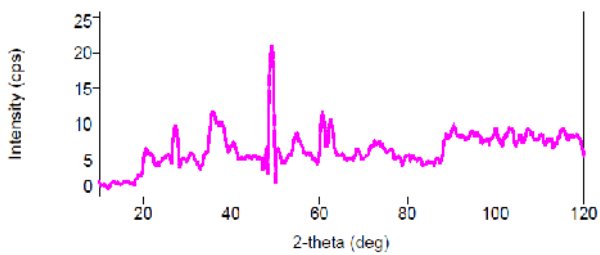
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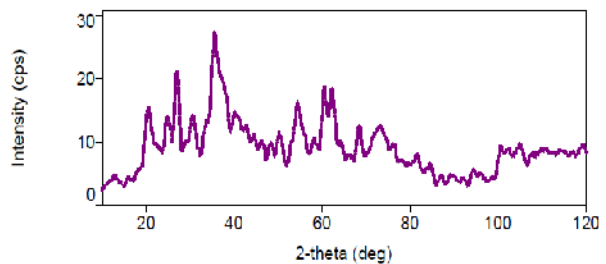


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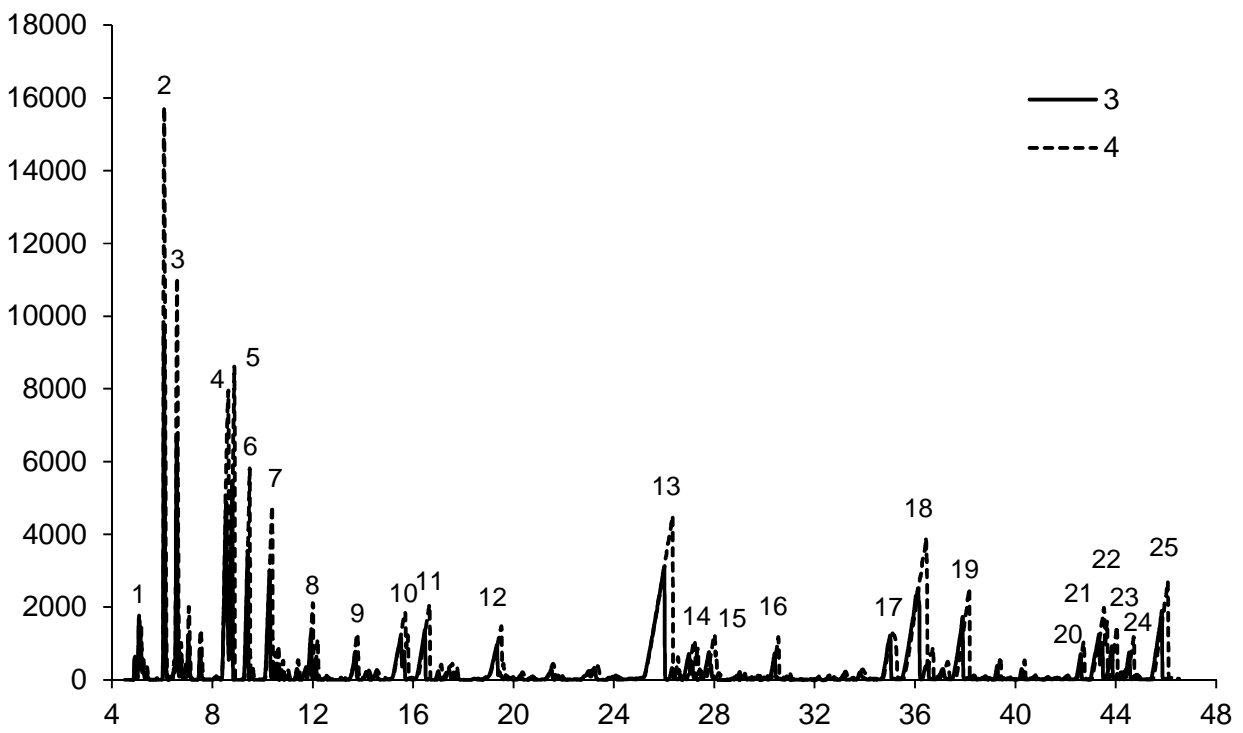
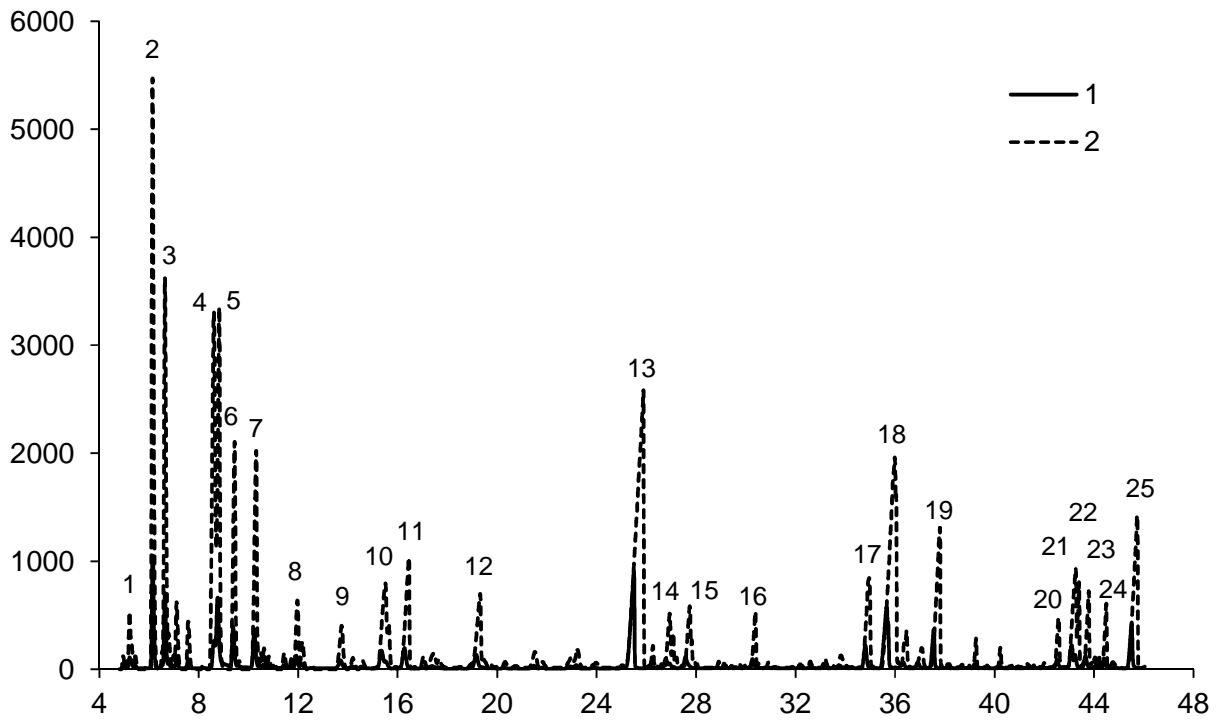
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-92, 30%	99,49 / 79,36	36,04	13,30	4,76	33,30	7,82	42,45	0,74
-92, 30%	102,42/ 80,35	31,86	12,83	5,56	32,98	13,09	49,69	0,73
-92, 30%	96,48 / 78,70	34,20	13,51	5,03	34,02	8,46	45,59	0,74
-92, 30%	101, 27/ 80,71	33,76	13,24	5,03	30,18	14,19	46,67	0,74

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