

## Geochemistry surveying of Kooch Kaftari metamorphism area (Iran - Shahrood )

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Metamorphism area of KoochKaftari in central part of Iran Located in 342000 to 348000 east and 3966000 to 3950000 north. This areas metamorphism was regional metamorphism with green schist facies or higher [1]. This study aimed to understand the economically major and minor elements in the region and their potential economic power. 15 prepared samples were sending to Labwest laboratory in Australia to analysis the samples by ICP-MS and ICP-OES for 61 main elements. All of the geochemical sample results mentioned as a group and the average were compared by the Continental Crust Clarke and upper Continental Crust Clarke to find the enrichment ratio of the area. Finally, elements such as Cr, Ba had positive enrichment and elements such as U, Zr had depleted, which indicate a lack of proper mineralization's of U, Zr in metamorphic rocks of there. Results of this comparison are presented in Table 1.

Elements	kooch kaftare	Continental crust		Upper continental crust	
		Clarke	EF	Clarke	EF
Fe%	3.74	5.63	0.66	3.52	<b>1.06</b>
Ca%	3.63	4.15	0.87	2.57	<b>1.1</b>
Ba	781.28	425	<b>1.84</b>	628	<b>1.24</b>
Cr	110.14	100	<b>1.10</b>	92	<b>1.20</b>
Zr	8.67	165	0.05	193	0.04
U	1.37	2.7	0.51	2.7	0.51

Table 1 - Comparison of mean values of metamorphic rocks of the continental crust and continental crust with average pigeon mountain upper.

[1] Huber, H. and Stocklin, J. (1956 ). Geological Report on the Torud- Moaleman area. N. I. O.C

## Analysis of the turquoise color alteration based on the FTIR studies

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The Neyshabour turquoise ore of the NE Iran is at 36°, 28' latitude and 58°, 20' longitude. The XRF results (table 1), are obtained of the blue and green turquoise samples. Concerning to that the turquoise by the Fe increase and Al decrease has color alteration from the blue (B) to the green (G) rang, in this study we analyzed this variation by infrared spectrometry FTIR method and the results has shown at figure 1

Element	B	G	Element	B	G
Al <sub>2</sub> O <sub>3</sub>	34.48	31.64	TiO <sub>2</sub>	0.04	0.07
Fe <sub>2</sub> O <sub>3</sub>	1.57	6.68	SiO <sub>2</sub>	0.60	0.66
CuO	9.61	9.27	Sb <sub>2</sub> O <sub>3</sub>	0.60	0
P <sub>2</sub> O <sub>5</sub>	30.04	28.22	L.O.I	21.11	19.66

Table 1: XRF The results

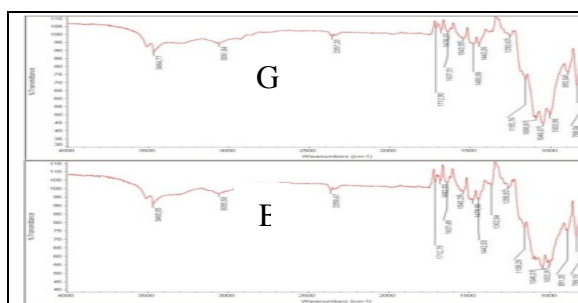


Figure 1: FTIR graphs

[1] Ray L. Frost ., B. Jagannadha Reddy., The molecular structure of the phosphate mineral turquoise Raman spectroscopic study., Journal of Molecular Structure 788 (2006) 224–231