

() (Ca ,Fe, Ni, Cd, Pb, Zn, As, Hg)

Igeo

.(Rauret, et al., 1988)

(Karbassi & Nadjafpour, 1996; Karbassi, et

al., 2008)

;Karbassi & Shankar, 1992)

.(Saeedi, et al., 2003; Karbassi, 1998)

μ

(Ramelow, 1992) (Karbassi & Shankar, 2005)

pH= ()

HCl % H₂O₂ %

HClO₄ cc cc / gr

cc

(Karbassi & Amirnezhad, 2004)

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(Karbassi & Narayana, 1992)

1) $TOM = (A+B) - (A+C) / (A+B) - A$

=A

+ = (A+B)

+ = (A+C)

cc gr cc

μ

°	°		N: ° ' "	
			E: ° ' / "	
°	°	:	N: ° ' / "	
			E: ° ' / "	
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			E: ° ' / "	
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			E: ° ' / "	

shale = Cn = Bn Buchanan,) Explor (1974 Cluster

2) $I_{geo} = \log_2 \{ (C_n/B_n) * 1.5 \}$

3) $EF = x/Fe(\text{sediment}) / x/Fe(\text{Earth crust})$

EF Igeo



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TOM%

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(%)

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(ppm) :()

As	
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(ppm) :()

Hg	
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TOM :()

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	%	
x	/	Fe
	/	Ca
/ / x	/	Ni
x	/	Zn
/ x	/	As
x	/	Pb
/ x	/	Cd
/ / x	/	Hg

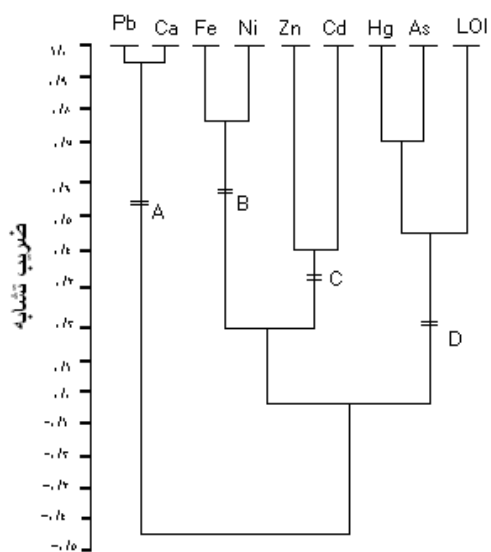
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$$I_{geo} = \frac{C_{Pb}}{C_{Ni}} / \frac{C_{Cd}}{C_{Fe}} / \frac{C_{Zn}}{C_{Hg}} / \frac{C_{As}}{LOI}$$



() :

Fe Zn

Cd

Eh pH

As Pb Ni
Hg

1-Geochemical Index

2-Enrichment Factor

- Karbassi, A.R. and R.,Amirnezhad. 2004. Geochemistry of heavy metals and sedimentation rate in a bay adjacent to the Caspian Sea. *Intl. J. Env. Sci. Tech.*, 1(3): 199-206.
- Saedi, M., A.R.,Karbassi, and N.,Mehrdadi. 2003. Flocculation of Ni, Zn, Mn, Cu during estuarine mixing of Tadjan river water with Caspian sea water. *Intl. J. Env. Studies*, 60: 1-6.
- Karbassi, A.R. and S.,Nadjafpour. 1996. Flocculation of dissolved Pb, Cu, Zn & Mn during estuarine mixing of river water with the Caspian Sea Water. *J. Env. Poll.*, 9313: 257-260.
- Karbassi, A.R. 1998. Geochemistry of Ni, Zn, Cu, Pb, Co, Cd, V, Mn, Fe, Al & Ca in sediments of North Western part of the Persian Gulf. *Intl. J. Env. Studies*, 54: 205-212.
- Karbassi,A.R. and R.,Shankar. 1992. Sedimentological evidence for a palaeobeach off Mangalore, West Coast of India. *Journal of Geological Society of India*, 40: 241-252.
- Karbassi,A.R. and A.C.,Narayana. 1992. Geochemistry of a laterite quarry near Mangalore, West Coast of India, *J. Science, University of Al-Zahra*, 3&4: 47-61.
- Karbassi,A.R., et al. 2008. Flocculation of heavy metals during mixing of freshwater with Caspian Sea water. *Environmental Geology*, 53 (8): 1811-1816.
- Rauret,G., et al. 1988. Determination and speciation of copper and lead in sediment of Mediterranean river (temes, catalonia, sapain). *Water Res.* 22(4):449-455.
- Ramelow,G. 1992. The identification of point sources of heavy metal in industrially impacted water way by periphyton and surface sediment monitoring. *water, Air and soil pollution*, 65:175-190.