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Detection of Ca^{2+} , Mg^{2+} , CO_3^{2-} and SO_4^{2-} in wells of Talsint region (Eastern Morocco) by ionic chromatography

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Applications using supercritical water often encounter the presence of inorganic compounds in feed streams, most often with a minor concentration. These compounds can lead to damage of the equipment via erosion, scaling and corrosion or can influence and disturb the main reaction and processes inside the systems. In order to avoid these problems and to predict the influence of these compounds, it is vital to possess knowledge of the chemical composition of the most common inorganic compounds in supercritical water. For this, the spatial variation of calcium, magnesium, bicarbonate and sulfate were investigated during low flow periods of the year 2011 at five wells level in the Takamine area, Talsint region, Eastern Morocco, using ionic chromatography method. The obtained results show that in the majority of wells, their values are higher than the values set by the WHO (Ca^{2+} : 270 mg.L⁻¹; Mg^{2+} : 50 mg.L⁻¹ and SO_4^{2-} : 500 mg L⁻¹). However, the total permanent hardness values in all studied stations were found higher indicating that these waters are very hard. These can be explained by the calcareous nature of the geological terrain where traversed by water. Finally, the majority of the studied water wells have a scale or corrosion character. This result limits the use of groundwater as drinking and cooling water in this area.

Biography

H. Taouil is associated with Hassan II University of Casablanca, Morocco. He has published various articles in many international journals.

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