

عنوان مقاله:

Study of Magnetic Nanoparticles with Microwave Waves to Extract Polyphenols from Pomegranate Peel

محل انتشار:

سومین کنگره بین المللی علوم و مهندسی (سال: 1398)

تعداد صفحات اصل مقاله: 19

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خلاصه مقاله:

Cobalt ferrite nanoparticles are synthesized using polyethylene glycol as a solvent and with no using surfactant by thermal the solvent method. Synthesized nanoparticles were characterized by using various techniques X-ray Diffraction (XRD), Scanning electron microscope (SEM), Diffuse Reflection Spectroscopy (DRS) and Energy-dispersive X-ray spectroscopy (EDAX). Transmission Electron Microscopy and Scanning electron microscope confirmed the spherical nanoparticles range in the size of 10-30 nm. There was also a very good match between the calculated particles size in the X-ray diffraction and electron microscopes results. Extraction of pomegranate peel and investigating of extracted polyphenols rate in the presence of cobalt nanoparticles and no cobalt nanoparticles present was done using microwave (MW). In this study total phenolic and flavonoid content, antioxidant activity and reducing power investigated. An investigation confirmed the unique effect of the presence of cobalt ferrite nanoparticles on total phenol, flavonoid and antioxidant activity. HPLC chromatogram showed the presence of Quercetin and kaempferol as natural flavonoids and gallic acid as a phenol.

کلمات کلیدی:

.Antioxidant activity, Punica granatum, Magnetic Nanoparticles

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