

## عنوان مقاله:

Carboxylic acid groups on the surface of Multi Walled Carbon Nanotubes as first reaction precursors in different fields

## محل انتشار:

چهارمین کنفرانس بین المللی نوآوری های اخیر در شیمی و مهندسی شیمی (سال: 1396)

تعداد صفحات اصل مقاله: 7

## نویسندگان:

Mohammadreza Gholibeikian - *aDepartment of Organic Chemistry, Faculty of Chemistry, University of Kashan, Kashan, I.R. Iran*

Amirreza Arvaneh - *bDepartment of Organic Chemistry, Faculty of Chemistry, University of science and Technology, Tehran, I.R. Iran*

## خلاصه مقاله:

The chemical functionalization of raw multi walled carbon nanotubes (MWCNT) were investigated by acidic mixture. MWCNTs were functionalized by four different ways. This four different ways were MWCNT-Reflux, MWCNT-H<sub>2</sub>O<sub>2</sub>, MWCNT-Sonicate, MWCNT-SonicateReflux, Respectively. HNO<sub>3</sub> and H<sub>2</sub>SO<sub>4</sub> treatment were first used to remove the catalyst from MWCNTs and introduce carboxylic acid groups onto the surface of MWCNTs. The oxidation process introduces not only carboxylic acid, but also alcohol or ketone or sulfonic acid species. These carboxylic groups were used as first reaction precursors in drug delivery. Successfully covalently attachment to MWCNT via carboxylation (MWCNT-COOH) were confirmed by Fourier Transform Infrared Spectroscopy (FT-IR), Raman scattering, Scanning Electron Microscopy (SEM) by four different ways for carboxylation in different processes.

## کلمات کلیدی:

Oxidation Process, Multi-Walled Carbon Nanotubes, Functionalization

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/675521>

