

## عنوان مقاله:

Switching behavior of an actuator containing germanium, silicon-decorated and normal C<sub>20</sub> fullerene

## محل انتشار:

مقالات مروری و پژوهشی شیمی، دوره 1، شماره 2 (سال: 1397)

تعداد صفحات اصل مقاله: 5

## نویسندگان:

Seyyed Amir Siadati - Department of Chemistry, Tofigh Daru Research and Engineering Pharmaceutical Company, Tehran, Ir

Solmaz Rezazadeh - Department of Chemistry, Payambar-e-Azam Educational Complex, Islamic Azad University, Tehran, Ira

## خلاصه مقاله:

NANO MACHINES which are of the capital aims of many advanced research projects would contain of complex systems of different devices and actuators that each of them plays a pre-defined role in the overall unit. Nano sensors, nano batteries, nano engines, and nano switches, which contain the most interesting devices for researchers in the related field, are being under consideration for the advance research projects of nano technology. Therefore, in the present project, we have made attempts to reveal the switching behavior of the benzene-C<sub>20</sub> fullerene system via a 1,5-sigmatropic shift of the germanium, and silicon-decorated C<sub>20</sub> fullerene carbon atoms on the benzene ring. The results showed that in the case of the silicon-decorated C<sub>20</sub> fullerene, changing the system from state A to state B via changing the temperature (24.7 kcal mol<sup>-1</sup>) is much easier than that of germanium-decorated (27.5 kcal mol<sup>-1</sup>) or normal C<sub>20</sub> fullerene (37.8 kcal mol<sup>-1</sup>). It seems that further studies on this phenomenon, might be beneficial for designing the thermal sensor systems, and energy storage devices

## کلمات کلیدی:

Switching behavior, actuator, germanium, silicon-decorated, C<sub>20</sub> fullerene

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1743264>

