

## Preparation of graphene oxide aerogel for absorption radionuclide from Iodine in water

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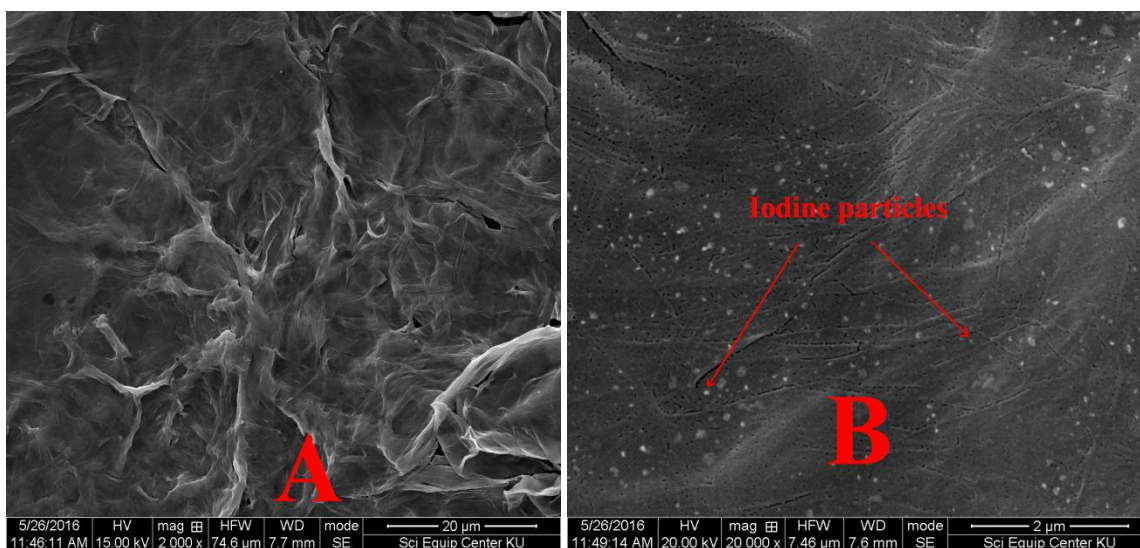
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### Abstract

In this work, the synthesis graphene oxide (GO) was fabricated based on the modified Hummer's method [1]. Graphene oxide gel (GO gel) prepared by centrifuged graphene solution at 5000 rpm for 20 min then it washed by DI water. In case of graphene oxide aerogel, the dry graphene oxide gel by Freeze Drying (at  $-10\text{ }^{\circ}\text{C}$  for 300 min). For absorption part we mixed GO gel 0.5 g and GO aerogel 0.5 g with Sodium iodide solution concentration 3.40% (w/v) at room temperature for 24 hours. It was revealed that the type of graphene has impacts to the adsorption iodine particles in water. The results of scanning electron microscopy (SEM) showed iodine particles on the surface of GO aerogel more than GO gel. Moreover the results of EDX show percentage of Iodine element inside The GO aerogel have 14.97% it better than the GO gel have 4.82 % of iodine element on the surface.

### References

[1] Leila Shahriary, Anjali A. Athawalee, International Journal of Renewable Energy and Environmental Engineering, **Graphene Oxide Synthesized by using Modified Hummers Approach** (2014)58-63.



**Figure 1.** SEM images of GO aerogels: (A) morphology of graphene oxide aerogel at 2000X (b) iodine particles on surface and inside of graphene oxide aerogel at 20000X (c)