

## Method-1

3g Graphite + 1.5 g  $\text{NaNO}_3$  add to 69 ml  $\text{H}_2\text{SO}_4$  (ice bath)

Add 9g  $\text{KMnO}_4$  ( $< 20^\circ \text{C}$ )

Stirring for 30 min at  $35^\circ \text{C}$

Add 138 ml DI water

Maintain at  $98^\circ \text{C}$  for 15 min

Cool to room temp using water bath

Add DI water (420 ml) and 30 %  $\text{H}_2\text{O}_2$  (3 ml)

Wash with HCL and water

## METHOD -2

(90 ml  $\text{H}_2\text{SO}_4$  / 10 ml  $\text{H}_3\text{PO}_3$ ) add to mixture of Graphite 1 g /  $\text{KMnO}_4$  6 g

Ice bath ( $< 20^\circ \text{C}$ )

Stirring for 12 hr at  $50^\circ \text{C}$

Cooled over night

Add Ice (200 ml) and 30 %  $\text{H}_2\text{O}_2$  (1 ml)

Wash with ethanol

Final material dissolve in water and do filter