

Figure 2.  $N_2$  adsorption-desorption isotherm, and pore size distribution for  $\gamma$ - $Al_2O_3$  prepared at different pH values

Figure 3 presents the SEM images of samples (a), (b), (c) alumina synthesized in different pH values. It can be seen that the sample (a) in Fig.3(A) are made of uniform microfibers with the length of about 300-500nm and the width of less than 100nm. There are also some little patches around the rod-like nanofibers, which were formed during the calcination process. Sample (b) present the same morphology as sample(a), but its overall dimensions was smaller. It is seen that the sample(c) exhibits a particle morphology with the aggregation of nanorod particles.

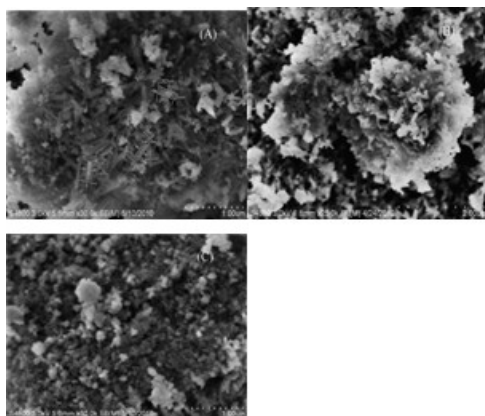


Figure 3. The SEM photographs of alumina synthesized in different pH values(A)pH=7.0,(B) pH=9.0, (C) pH=11.0.

#### IV. CONCLUSION

Ammonium aluminum carbonate hydroxide and  $\gamma$ - $Al_2O_3$  had been successfully synthesized by hydrothermal process of  $Al(NO_3)_3 \cdot 9H_2O$  with the  $NH_4HCO_3$ . The study showed that the morphology and aspect ratios of resulting AACH nanoparticles were significantly influenced by the pH values. Nanofibers were synthesised at the pH=7.0 and 9.0. While, nanoplates were synthesised at the pH value of 11.0. However, the detailed mechanism is not clear and still under way nowadays.

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