method (ionic liquid assisted solvent evaporation process) is a possible route to synthsize γ-Al_2O_3 with high surface area and unfiorm mesopore size.

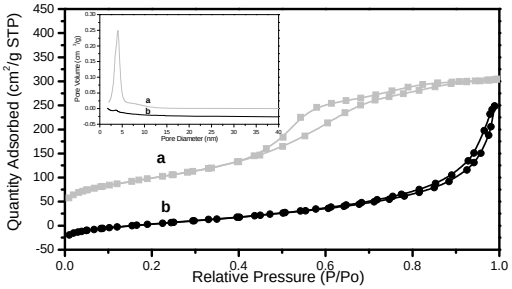

Figure 4. N_2 adsorption and desorption isotherms and pore size distribution (inset) for the γ-Al_2O_3 samples with $[Omim]^+Cl^-$ (a) and (b) without $[Omim]^+Cl^-$

TABLE 1. TEXTURAL PROPERTY OF γ-Al_2O_3 WITH OR WITHOUT $[Omim]^+Cl^-$

Samples	Textural Property			
	BET Surface Area (m^2/g)	***T-polt micropore area (m^2/g)***	***Pore Volume (cm^3/g)***	***Average Pore Size (nm)***
With $[Omim]^+Cl^-$	355.74	-0.0029	0.45	5.27
Without $[Omim]^+Cl^-$	190.83	19.84	0.46	8.27

IV. CONCLUSION

Here, we reported a new method (ionic liquid assisted solvent evaporation process) to synthsize γ-Al_2O_3 with high surface area and unfiorm mesopore size.The study shows that $[Omim]^+Cl^-$ plays an important role in the formation of mesostructured γ-Al_2O_3 materials with wormlike pore structure, which might be attributed to the strong interactions between the ionic liquid $[Omim]^+Cl^-$ and reaction particles. However, the detailed mechanism is not clear and still under way nowadays. Furthermore, the method can be applied into synthesizing other inorganic materials with high surface area and unfiorm mesopore size, and the mesostructured γ-Al_2O_3 developed in the present work have potential applications in catalysts, optical nanodevices.

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