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Poster 1

## $^{51}\text{V}$ and $^7\text{Li}$ Solid-state NMR Studies on Vanadium Oxides of Lithium Battery

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We have performed a study of the Nuclear Magnetic Resonance (NMR) of  $^{51}\text{V}$  and  $^7\text{Li}$  with  $\text{Ag}_x\text{V}_2\text{O}_5$  which is active material for cathode in Lithium ion secondary battery. Doped vanadium pentoxides with a doping ratio Ag/V ranging from 0.1 to 0.5 were synthesized by sol-gel process, and  $\text{Li}^+$  of  $\text{Li}_x\text{Ag}_y\text{V}_2\text{O}_5$  was intercalated by electrochemical method.  $^7\text{Li}$  and  $^{51}\text{V}$  NMR spectra is performed by single-pulse and quadrupolar-echo, respectively. The knight shift of  $^7\text{Li}$  NMR was not observed, but the linewidth of each peaks were changed. We observed the changes of  $^{51}\text{V}$  NMR according to various  $\text{Li}^+$  contents in  $\text{Ag}_y\text{V}_2\text{O}_5$ . In addition, we investigated the  $\text{Ag}_y\text{V}_2\text{O}_5$  employing SEM and XRD to confirm the results.