$Na_4PMo_{11}VO_{40}$-catalyzed one-pot oxidative esterification of benzaldehyde with hydrogen peroxide

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Supplemental material

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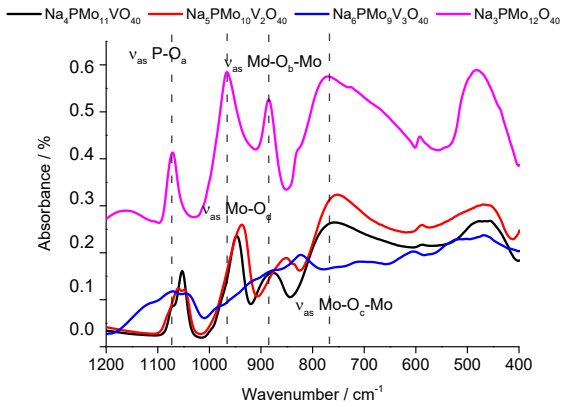


Figure 1SM. FT-IR/ATR spectra of undoped and doped-Vanadium phosphomolybdic salts

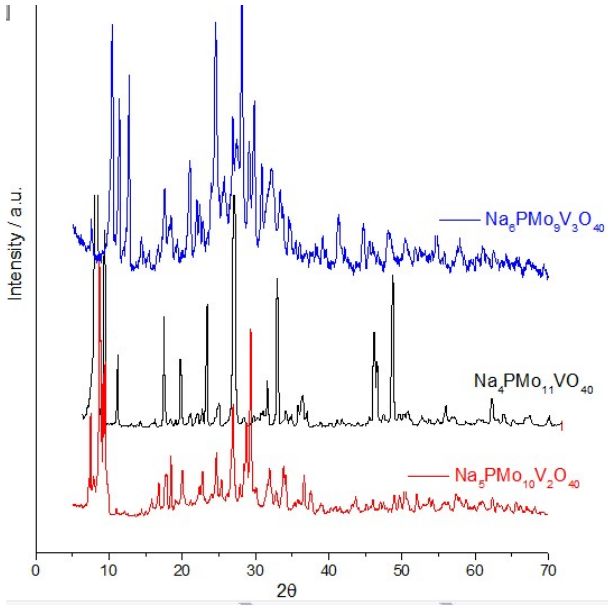


Fig. 2SM Powder XRD of Vanadium (mono, di-, or tri)-substituted Sodium phosphomolybdate salts

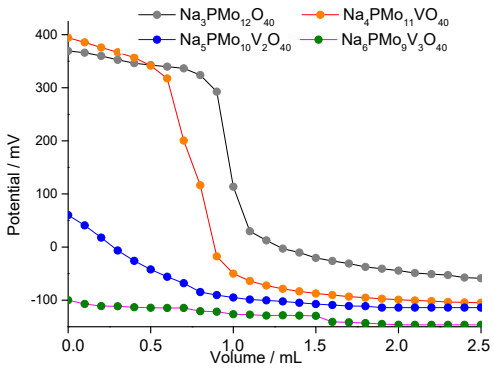
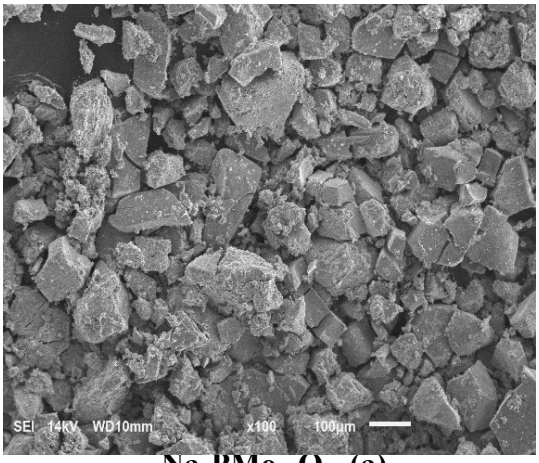
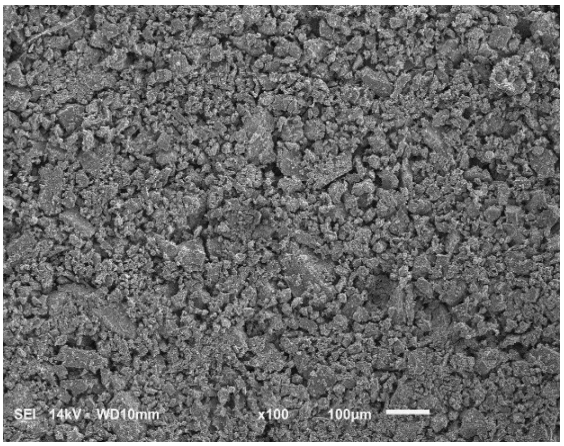


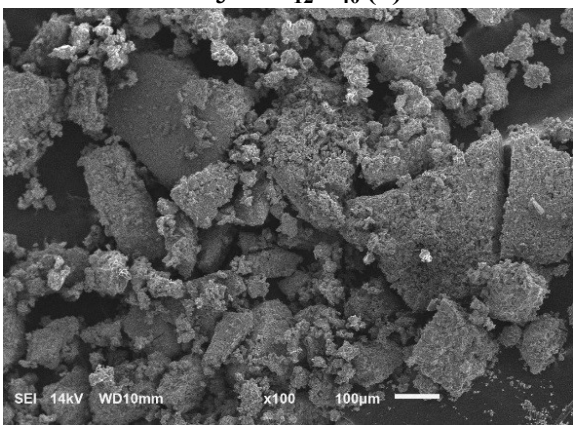
Fig. 3SM. Potentiometric titration curves with n-butylamine of Undoped and Vanadium-doped sodium phosphomolybdate salts



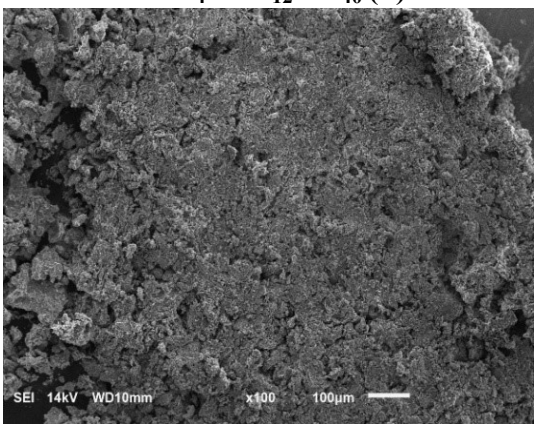
$Na_3PMo_{12}O_{40}$ (a)



$Na_4PMo_{12}VO_{40}$ (b)



$Na_5PMo_{10}V_2O_{40}$ (c)



$Na_6PMo_9V_3O_{40}$ (d)

Figure 4SM. Scanning electronic microscopy images of $Na_3PMo_{12}O_{40}$ (a), $Na_4PMo_{11}V_1O_{40}$ (b), $Na_5PMo_{10}V_2O_{40}$, and $Na_6PMo_9V_3O_{40}$ (d)