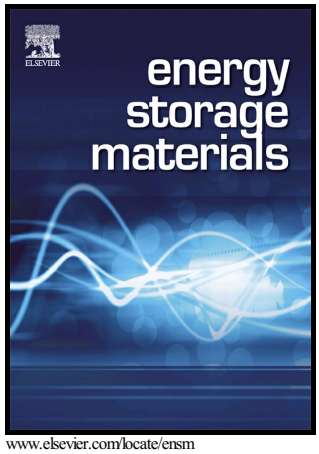

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Revitalized interest in vanadium pentoxide as cathode material for lithium-ion batteries and beyond

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Abstract: Revitalized interest in vanadium pentoxide (V_2O_5) arises from two very important developments in rechargeable batteries. One is the push on lithium-ion batteries for higher energy density batteries: using lithium metal as anode and searching for higher capacity and high voltage cathode. Using lithium metal anode eliminates the big obstacle for V_2O_5 cathode that does not come with lithium ions. V_2O_5 possesses the highest reversible capacity among known cathode materials. Another is the recent intensive research for cathode materials beyond Li-ion batteries (LIBs). In the past several years, interest in complementary alkali-ion battery technologies has seen a tremendous resurgence. Out of the set of alternative chemistries, V_2O_5 has seen the most