

Low-Dimensional Vanadium Oxides

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Vanadium oxides have played an important role in the study of strongly correlated electron system. For example V_2O_3 has served as a prototype for the Mott-Hubbard model. Recently low dimensional vanadium oxides have drawn much attention of researchers in the anomalous properties as quantum spin systems. In this article, various vanadium oxides are reviewed in terms of charge-order or quantum spin phenomena. First the binary V-O compounds and then ternary AV_2O_5 compounds are briefly reviewed in the light of metal-insulator transition and quantum spin phenomena, respectively. Finally recent results on vanadium bronzes $\beta(\beta')\text{-}A_xV_2O_5$ are reported.

KEYWORD: low dimensional vanadium oxides, metal-insulator transition, charge order, spin-singlet, spin-gap, quasi 1-D conductor