

## Field Effect in Correlated Electron Systems

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A common feature of correlated complex oxides is the sensitivity of their physical properties to changes in the carrier concentration. Modification of the carrier concentration is usually accomplished through chemical doping, which introduces chemical and structural disorder into the system. Here, we describe electric field effect experiments on colossal magnetoresistive manganites, showing the possibility of inducing large, reversible changes in the magnetic properties through electrostatic modulation of the carrier concentration. We compare electrostatic doping with chemical doping, which shows that differences in transport properties arise because of structural distortions that occur with chemical substitution.