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Energetics of reversible and non-reversible charge disordering effect in manganites induced by external beam irradiation C. H. CHEN, National Taiwan University, Taipei, Taiwan, Y. HORIBE, Osaka Prefecture University, Osaka, Japan, S. MORI, Osaka Prefecture University, Osaka, Japan, S-W. CHEONG, Rutgers University, Piscataway, NJ — The reversible electron beam-induced melting and reentrant behavior of charge-ordered state in (Bi,Ca)MnO₃ phenomenon is in sharp contrast with the non-reversible effect in (Pr,Ca)MnO₃ observed under similar experimental conditions. In the Pr-manganites the charge disordering effect depends upon the total energy deposited on the sample by the incident beam, whereas in the Bi-manganites the reversible effect is a function of the power input from the incident beam. The energetics of the electron beam-induced effect in these two systems can be understood in the frame work of lifetime of the charge disordered clusters induced by the external irradiation. .

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