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Hysteresis Effects in Ag-Doped Superconducting Y-Ba-Cu-O ATILGAN ALTINKOK, KIVILCIM KILIC, ATILLA KILIC, MURAT OLUTAS, HAKAN YETIS, KILIC TEAM — Time and hysteresis effects have been studied by magneto-voltage ($V-H$ curves) measurements in Ag doped sample of $YBa_2Cu_3O_{7-x}$ (YBCO/Ag) as functions of transport current (I), sweep rate of external magnetic field (dH/dt) and temperature. Ag was added in the amount of 3% of nominal composition of Cu in YBCO. It was observed that the dissipation in V-H curves does not change as dH/dt increases. This suggests that Ag doping destroys the weak-link structure along inter-grain boundaries and thus the vortices can find enough time to move in the sample irrespective of varying of external H. .The hysteresis effects in V-H curves ride on a background voltage at the temperatures near the T_c. In one hand, the background voltage of V-H curves decreases by taking low values as the temperature decreases, in the other hand, the hysteresis effects become more significant. It was observed that the evolution of V-H curves depends also on the magnitude of transport current. The increase in I causes a considerable enhancement in background voltage in V-H curves. Similar measurements were repeated for YBCO sample without Ag for a comparison. Experimental observations between YBCO/Ag and YBCO establish that adding of Ag into the superconducting matrix causes the formation of easy metallic flow paths for vortices and thus easy distribution of vortices along grain boundaries.

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