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Current-Induced Domain-Wall Motion in Perpendicularly Magnetized Magnetic Nanowires with Unflatted Surfaces HIROFUMI MORISE, TSUYOSHI KONDO, SHIHO NAKAMURA, Corporate R&D Center, Toshiba Corporation — We study the current-induced domain wall motion in perpendicularly magnetized magnetic nanowires with unflatted surfaces numerically. There, the axis of the anisotropy is assumed to be normal to the surfaces, that is, it is inclined continuously along the extended direction of the nanowire. The relationship between the current density and the velocities of domain walls are investigated by use of micromagnetics simulations. Comparing with the motion in a flat nanowire, the existence of an additional exchange energy due to the curvature significantly affects the motion of the domain walls.

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