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**Kazufumi Ito\*** ([kito@math.ncsu.edu](mailto:kito@math.ncsu.edu)), Dept. of Mathematics, Box 8205, North Carolina State University, Raleigh, NC 27695. *Boundary control of Cahn-Hilliard-Navier-Stokes systems.*

The optimal boundary control of a Cahn-Hilliard-Navier-Stokes system is discussed. A general class of free energy potentials is considered, especially the double-obstacle potential. The well-posedness and existence of the boundary optimal control problems are established. The necessary optimality is derived and analyzed. (Received September 13, 2016)