1113-35-225 **Madalina Petcu*** (madalina.petcu@math.univ-poitiers.fr), Téléport 2 - BP 30179, Boulevard Marie et Pierre Curie, 86962 Futuroscope Chasseneuil Cedex, 86962 Poitiers, France, and **Laurence Cherfils** (laurence.chefils@univ-lr.fr), Laboratoire MIA, Avenue Michel Crepeau, 17042 La Rochelle, France. *On the viscous Cahn-Hilliard-Navier-Stokes equations with dynamic boundary conditions.*

In this talk we study the viscous Cahn-Hilliard-Navier-Stokes model, endowed with dynamic boundary conditions, from the theoretical and numerical point of view. We start by deducing results on the existence, uniqueness and regularity of the solutions for the continuous problem. Then we propose a space semi-discrete finite element approximation of the model and we study the stability and the convergence of the approximate scheme. We also prove the stability and convergence of a fully discretized scheme, obtained using the semi-implicit Euler scheme applied to the space semi-discretization proposed previously. Numerical simulations are also presented to illustrate the theoretical results. (Received August 23, 2015)