1036-35-179 **Fanghua Lin**, Courant Institute of Mathematical Sciences, New York University, New York, NY 10012, **Xingbin Pan**, Department of Mathematics, Eastern China Normal University, Shanghai, Peoples Rep of China, and **Changyou Wang***, Department of Mathematics, University of Kentucky, Lexington, KY 40506. *On Keller-Rubinstein-Sternberg's problem.* Preliminary report.

In this talk, I will describe a joint work with F.H.Lin and X.B.Pan on the asymptotics of the Ginzburg-Landau energy

$$E_\epsilon(u) = \int_\Omega \frac{1}{2}|\nabla u|^2 + \frac{1}{\epsilon^2}F(u), \Omega \subset R^n,$$

where $F(p)$ is roughly the distance function to $N = N_1 \cup N_2$, where N_1, N_2 are two disjoint submanifolds in R^k. By suitably designing the boundary data $g : \partial\Omega \to R^k$, we show that

$$\min E_\epsilon(u) = \frac{c_0 A_0}{\epsilon} + o(\frac{1}{\epsilon}),$$

where A_0 is the area of the interface which is a minimal hypersurface, and c_0 is roughly the minimal energy of standing waves between N_1 and N_2. I will also discuss the second order expansion of E_ϵ and some results on the dynamics. (Received January 22, 2008)