1086-65-390   **Jie Shen***, Department of Mathematics, Purdue University, West Lafayette, IN 47906. *New phase-field models and energy stable numerical schemes for multiphase flows with different densities.*

I shall present two new phase field models, one incompressible and the other quasi-incompressible, for multiphase flows with different densities. I shall also present efficient and energy stable numerical schemes, as well as some numerical results which validate the flexibility and robustness of these phase-field models. (Received August 28, 2012)