1096-76-1670 **Muhammad Hameed*** (mhameed@uscupstate.edu), University of South Carolina Upstate, 800 University Way, Spartranburg, SC 29303. *Singularity approach to study the particle encapsulation in a liquid thread.*

The capillary instability of a viscous liquid thread containing solid particles is studied. The solid spherical particle is placed at the center-line of the liquid column. The liquid is highly viscous and the governing equations are axi-symmetric Stokes equations. The presence of the force-free particle is represented by a symmetric hydrodynamic force dipole. A simplified long-wave mathematical model is derived and numerical simulations are carried out to study different aspects of trapped solid particles in thread elongation. Results are presented for one solid particle, different particle sizes and for multiple particles symmetrically placed along the center-line. (Received September 16, 2013)