

# Synthesis for Graphene Dispersant via Reversible Addition-Fragmentation Chain Transfer Polymerization

Hyang Moo Lee, Mi Ri Kim, and In Woo Cheong

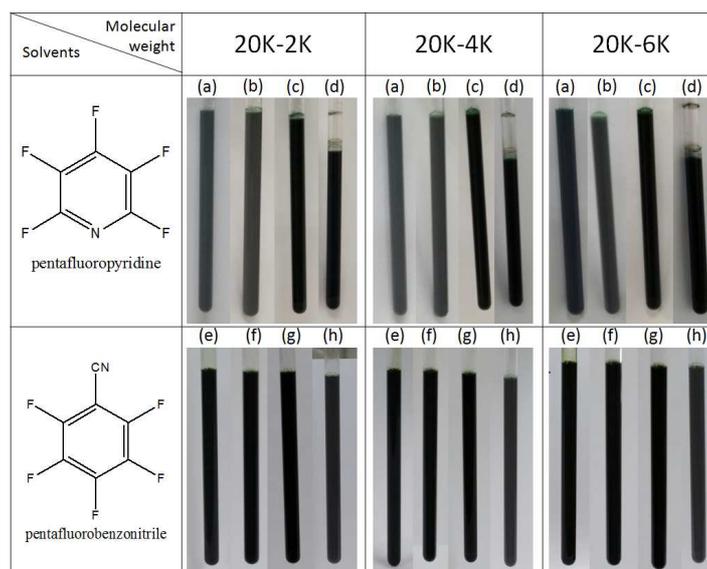
Department of Applied Chemistry, Kyungpook National University, Daegu 702-701, South Korea.  
[inwoo@knu.ac.kr](mailto:inwoo@knu.ac.kr)

**Abstract** In this research, synthesis of graphene dispersant and dispersing graphene using synthesized dispersant will be presented. Block copolymers are prepared as a dispersant via reversible addition-fragmentation chain transfer (RAFT) polymerization.<sup>1</sup> Poly 2,2,2-trifluoroethyl methacrylate (PTFEMA) is used as a solvophilic block, and poly 4-vinyl pyridine (PVP) is used as a graphene-philic block. The resulted polymers are characterized using gel permeation chromatography (GPC) and nuclear magnetic resonance (NMR), and the graphene dispersions are characterized using ultraviolet-visible spectroscopy (UV-Vis) and transmission electron microscopy (TEM). (**Acknowledgement:** This work was supported by the Ministry of Trade, Industry and Energy, Grant No. 10044338)

## References

[1] Daniel J. Keddie; Graeme Moad; Ezio Rizzardo; San H. Thang *Macromolecules* 45 (2012) 5321.

## Figures



Time dependent photographic images of graphene dispersions.