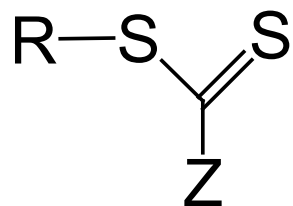


Development of Advanced Functional Materials by RAFT Polymerization

Professor Hideharu Mori

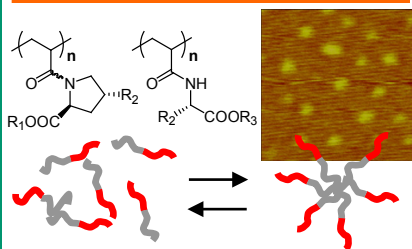
RAFT Polymerization



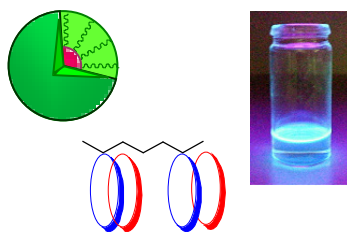
Dithioester compound
(Chain Transfer Agent)

- Facile and simple approach
- Metal-free system
- Most versatile (monomer and reaction medium)

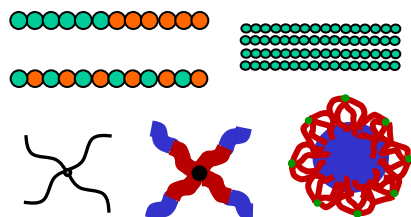
Amino acid-based polymers



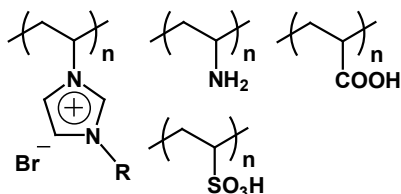
Optoelectronic materials



Macromolecular design



Polyelectrolytes



Content:

Recent development in controlled radical polymerization methods has provided methodologies to synthesize well-defined functional polymers by a very facile and simple approach. Among various controlled radical polymerizations, reversible addition-fragmentation chain transfer (RAFT) polymerization is the most versatile with respect to the monomer and the reaction medium, which lead to the development of novel polymeric materials with a variety of functional groups and unique properties.

Our research interests are focused on the design, synthesis, and characterization of nanostructured polymeric materials and advanced functional materials. We mainly employed RAFT polymerization to afford well-defined functional polymers involving optoelectronic polymers, amino acid-based polymers, stimuli-responsive polymers, and polyelectrolytes. We are also focused on unique polymerization systems (controlled radical polymerization of *N*-vinyl monomers, ring-opening RAFT polymerization) and macromolecular design (star-shaped and hyperbranched polymers, amphiphilic block copolymers, alternating copolymers).

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