



# Novel RAFT Agent with Unique Polymer Synthesizing Capabilities

Technology Case: RFT-0228

## Invention Summary

Scientists at North Dakota State University have successfully synthesized novel RAFT (Reversible Addition Fragmentation Chain Transfer) agents that have either an epoxy or an oxetane functional group attached to it. These tri-thio-carbonate compounds can be used to synthesize polymers having well-defined molecular weight, retaining the functional group on chain ends. Homopolymers and block copolymer of several acrylates have been shown to be synthesized using either of the functional RAFT agents.

The versatility of the epoxy group enables coupling of hydrophobic/hydrophilic blocks with various functional groups like amine, carboxylic acids and alcohols.

## Application Areas

- These functional polymers can be polymerized to form polymer brushes, or can react with other polymers or substrates having complementary functional groups to form block copolymers that have both a hydrophobic and a hydrophilic part, due to which, they find uses in a range of application such as emulsifiers and surfactants in dispersing agents and adhesives.
- Broadly, these agents can be used in the paints and polymer industry, and pharmacy as systems for drug delivery.

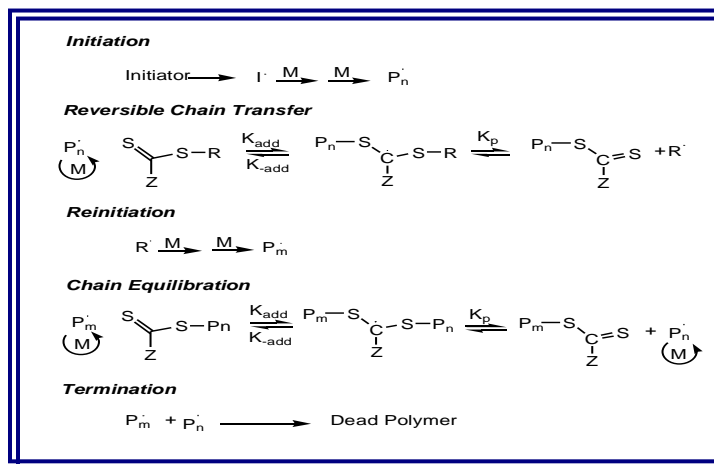


Fig. Mechanism of RAFT polymerization.

## Patents

This technology is patent pending with fully preserved world-wide PCT patent rights available for licensing/partnering opportunities.

## Inquiries

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