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## Hyperbranched Polymers by Type II Photoinitiated Self-Condensing Vinyl Polymerization

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### Abstract

Type II photoinitiated self-condensing vinyl polymerization for the preparation of hyperbranched polymers is explored using 2-hydroxyethyl methacrylate (HEMA) or 2-(dimethylamino) ethyl methacrylate (DMAEMA), and methyl methacrylate as hydrogen donating inimers and comonomer, respectively, in the presence of benzophenone and camphorquinone under UV and visible light. Upon irradiation at the corresponding wavelength, the excited photoinitiator abstracts hydrogen from HEMA or DMAEMA leading to the formation of initiating radicals. Depending on the concentration of inimers, type of the photoinitiator, and irradiation time, hyperbranched polymers with different branching densities and cross-linked polymers are formed.

### Keywords

**Author Keywords:** [hyperbranched polymers](#); [photopolymerization](#); [vinyl polymerization](#)

**KeyWords Plus:** [FREE-RADICAL POLYMERIZATION](#); [VISIBLE-LIGHT](#); [CATIONIC-POLYMERIZATION](#); [POLYETHER-POLYOLS](#); [BLOCK-COPOLYMERS](#); [STAR POLYMERS](#); [SYSTEMS](#); [PHOTOPOLYMERIZATION](#); [COMPOSITES](#); [CAMPHORQUINONE](#)

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