

PATENT ASSIGNMENT

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Invention Title: Method for Producing Polymers with Desired Molecular Weight and End Group

Functionality Using Photopolymerization in Microemulsions

Inventor(s): Alec B Scranton, Kaveri Jain

U.S. Filing/Issue Date: 11/01/04

Patent or Application Serial No.: PCT/US04/36204

Grant/Contract Number(s): EEC0002971

Foreign Applications filed/intended in (countries): _____

The invention identified above is a Subject Invention under **35 U.S.C. 200, et seq.**, and the Standard Patent Rights clause at **37 CFR 401.14, FAR 52.227-11** or **FAR 52.227-12** (if applicable) which are included among the terms of the above identified grant or contract award from the United State Government. This document is confirmatory of:

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Signed this 18 day of FEB, 2005
 By W. Bruce Wheaton (Name of Grantee/Contractor Official) [Signature] (Signature)

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**METHOD FOR PRODUCING POLYMERS WITH CONTROLLED
MOLECULAR WEIGHT AND END GROUP FUNCTIONALITY USING
PHOTOPOLYMERIZATION IN MICROEMULSIONS**

5 **STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR
DEVELOPMENT**

This invention was made with government support under NSF
Industry/University Cooperative Research Center (IUCRC) Grant EEC 00-02971
awarded by NSF. The government may have certain rights in the invention.

10 **CROSS REFERENCE TO RELATED APPLICATIONS**

This application claims the benefit of U.S. application Serial No. 10/699,994,
filed November 3, 2003. This application is hereby incorporated by this reference in
its entirety for all of its teachings.

BACKGROUND

15 Free radical polymerization is by far the most widely used chain
polymerization technique for industrial applications. These industrial applications
include, for example, thin films, coatings, paints, adhesives, optics, dental filling,
sealing compound, and stereo-lithography. These reactions offer many advantages
over other polymerizations, including 1) high reaction rates, 2) insensitivity to
20 impurities (compared to anionic and cationic polymerizations), and 3) a wide
selection of commercially available monomers and oligomers.

Control of molecular weight and end groups (functionalities) is currently
accomplished by living anionic polymerization. The active centers in anionic
polymerizations are highly reactive carbanions. The reactions carry on until all the