



Ionization radiation imageable photopolymer compositions

Description of Technology:

This invention discloses compositions that can be polymerized/crosslinked imagewise upon exposure to ionization radiation such as x-ray, electron beam, ion beam, and gamma-ray. This invention also discloses methods of use for these compositions for microfabrication of ceramics, for stereolithography, and for x-ray, e-beam, and ion-beam lithography which can be used for photoresists.

Patent Listing:

1. **US Patent No. 6916598**, Issued July 12, 2005, "Ionization radiation imageable photopolymer compositions"

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HTTOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=6,916,598.PN.&OS=PN/6,916,598&RS=PN/6,916,598>

Market Potential:

UV-VIS-IR-sensitive photopolymer compositions have been used extensively in many applications in the area of photolithography, graphic art, stereolithography, and printing and publishing. All of these applications require materials that can be polymerized imagewise; that is, the polymerization reaction is spatially confined to the region irradiated by the photons to retain the input image with good fidelity and spatial resolution. Because of the short penetration depth (in absorbing media) and scattering problems of optical photons, the use of relatively thin and transparent photopolymer films is usually required for these applications. Opaque medium is very problematic for this technology. These issues may be resolved by the development of useful x-ray sensitive photopolymers.

Benefits:

- A composition, that can be polymerized/cross-linked imagewise by ionization radiation
- Methods to use these compositions for microfabrication of ceramics, for stereolithography and as photoresists in x-ray, e-beam, and ion-beam lithography.

Applications:

- X-rays
- Photolithography
- Graphic Art
- Stereolithography
- Printing
- Publishing

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