Three dimensional profile simulation for positive photoresists

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ABSTRACT
The least action principle algorithm is extended to model the development of a three dimensional latent image
in an exposed resist. The photoactive compound (PAC) concentration is determined in a model resist film from
the exact solution of Dill's equations for the exposure bleaching process for the case of a matched substrate. The
procedure is valid for all mask shapes and is illustrated with an elliptical symmetry imposed upon the incident
light intensity. Utilizing these PAC gradients, the three dimensional least action principle algorithm is employed to
compute developed resist profiles.