

Design and Fabrication of a Mask Projection Microstereolithography System
for the Characterization and Processing of Novel Photopolymer Resins

Philip Michael Lambert

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

Master of Science
In
Mechanical Engineering

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Description of item under review for fair use: Figure 1-3, Source: C. Heller, M. Schwentenwein, G. Russmueller, F. Varga, J. Stampfl, and R. Liska, "Vinyl Esters : Low Cytotoxicity Monomers for the Fabrication of Biocompatible 3D Scaffolds by Lithography Based Additive Manufacturing," pp. 6941-6954, 2009

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Virginia Tech ETD Fair Use Analysis Results

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Name: Philip Michael Lambert

Description of item under review for fair use: Figure 1-6, J. Lannutti, D. Reneker, T. Ma, D. Tomasko, and D. Farson, "Electrospinning for tissue engineering scaffolds," Mater. Sci. Eng. C, vol. 27, no. 3, pp. 504-509, Apr. 2007.

Report generated on: 07-27-2014 at : 15:36:52

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

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Your consideration of the nature of the copyrighted work you used weighs: *in favor of fair use*

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Description of item under review for fair use: Figure 3-2, Texas Instruments, "DLP ® 0.95 1080p 2 x LVDS Type A DMD," no. September. p. 29, 2012.

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Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

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Factor 3

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Name: Philip Michael Lambert

Description of item under review for fair use: Figure 3-4, Source: Keynote Photonics, "FlexLight TM X1 DLP ® Development System Open Platform DLP ® Technology." pp. 1-2, 2012.

Report generated on: 07-27-2014 at : 15:39:20

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

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Description of item under review for fair use: Figure 3-6, Source: Hamamatsu, "UV-LED Spot Light Source LightningCure LC-L1V3." Iwata City, japan, p. 4, 2012.

Report generated on: 07-27-2014 at : 15:40:19

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

Factor 2

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Description of item under review for fair use: Figure 3-7, Source: Edmund Optics, "Beam Expanders." [Online]. Available: <http://www.edmundoptics.com/learning-and-support/technical/learning-center/application-notes/lasers/beam-expanders/>. [Accessed: 17-Jan-2013].

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Factor 1

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Name: Philip Michael Lambert

Description of item under review for fair use: Figure 4-1, Source: P. Jacobs, "Fundamentals of stereolithography," Proc. Solid Free. Fabr., July, 1992.

Report generated on: 07-27-2014 at : 15:43:28

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

Factor 2

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Name: Philip Michael Lambert

Description of item under review for fair use: Figure 6-1(bottom), Source: A. Jariwala, F. Ding, and D. W. Rosen, "Modeling effects of oxygen inhibition in mask-based stereolithography," Rapid Prototyp. ..., vol. 17, no. 3, pp. 168-175, 2011

Report generated on: 07-27-2014 at : 15:46:18

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

Factor 2

Your consideration of the nature of the copyrighted work you used weighs: *in favor of fair use*

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Description of item under review for fair use: Table 6-3, Source: J.-W. Choi, R. B. Wicker, S.-H. Cho, C.-S. Ha, and S.-H. Lee, "Cure depth control for complex 3D microstructure fabrication in dynamic mask projection microstereolithography," Rapid Prototyp. J., vol. 15, no. 1, pp. 59–70, 2009.

Report generated on: 07-27-2014 at : 15:47:32

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

Factor 2

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Name: Philip Michael Lambert

Description of item under review for fair use: Figure 6-8, Source: J.-W. Choi, R. B. Wicker, S.-H. Cho, C.-S. Ha, and S.-H. Lee, "Cure depth control for complex 3D microstructure fabrication in dynamic mask projection microstereolithography," Rapid Prototyp. J., vol. 15, no. 1, pp. 59–70, 2009.

Report generated on: 07-27-2014 at : 15:48:26

Based on the information you provided:

Factor 1

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

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Factor 4

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Description of item under review for fair use: Table 6-4, Source: J.-W. Choi, R. B. Wicker, S.-H. Cho, C.-S. Ha, and S.-H. Lee, "Cure depth control for complex 3D microstructure fabrication in dynamic mask projection microstereolithography," Rapid Prototyp. J., vol. 15, no. 1, pp. 59-70, 2009.

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Based on the information you provided:

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Factor 2

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Factor 3

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Name: Philip Michael Lambert

Description of item under review for fair use: Figure 6-9, Source: J.-W. Choi, R. B. Wicker, S.-H. Cho, C.-S. Ha, and S.-H. Lee, "Cure depth control for complex 3D microstructure fabrication in dynamic mask projection microstereolithography," Rapid Prototyp. J., vol. 15, no. 1, pp. 59–70, 2009.

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Description of item under review for fair use: Figure 6-10, Source: M. M. Zabt, "Effects of Light Absorber on Micro Stereolithography Parts," The University of Birmingham, 2012.

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Description of item under review for fair use: Table 6-5, Source: M. M. Zabti, "Effects of Light Absorber on Micro Stereolithography Parts," The University of Birmingham, 2012.

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