

Jellyfish Inspired Underwater Systems and Technologies

COLIN FREDERICK SMITH

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

Committee Chair: Shashank Priya
Committee Member: Donald Leo
Committee Member: Timothy Long

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Virginia Tech ETD Fair Use Analysis Results

This is not a replacement for professional legal advice but an effort to assist you in making a sound decision.

Name: Colin Smith

Description of item under review for fair use: Figure 7. Timothy G. Constandinou and Julius Georgiou. Micro-Optoelectromechanical Tilt Sensor. Journal of Sensors. Volume 2008 (2008), Article ID 782764, 7
pagesdoi:10.1155/2008/782764

Report generated on: 12-02-2011 at : 16:37:10

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*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the

market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*



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Virginia Tech ETD Fair Use Analysis Results

This is not a replacement for professional legal advice but an effort to assist you in making a sound decision.

Name: Colin Smith

Description of item under review for fair use: Figure 9. Ho Jung, Chang Jin Kim, Seong Ho Kong. An optimized MEMS-based electrolytic tilt sensor. Sensors and Actuators A: Physical. Volume 139, Issues 1-2, 12 September 2007, Pages 23-30

Report generated on: 12-02-2011 at : 16:41:03

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*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the

market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*



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Virginia Tech ETD Fair Use Analysis Results

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Name: Colin Smith

Description of item under review for fair use: Portion of Figure 4. Lijun Tang, Kairui Zhang, Shang Chen, Guojun Zhang, Guowen Liu. MEMS inclinometer based on a novel piezoresistor structure. Microelectronics Journal. Volume 40, Issue 1, January 2009, Pages 78-82.

Report generated on: 12-02-2011 at : 16:43:57

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*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the

market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*



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Virginia Tech ETD Fair Use Analysis Results

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Name: Colin Smith

Description of item under review for fair use: Figure 1. S. Billat, H. Glosch, M Kunze, F. Hedrich, J. Frech, J. Auber, H. Sandmaier, W Wimmer, W. Lang. Micromachined inclinometer with high sensitivity and very good stability. Sensors and Actuators A: Physical. Volumes 97-98, 1 April 2002, Pages 125-130.

Report generated on: 12-02-2011 at : 16:46:40

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*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the

market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*



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Name: Colin Smith

Description of item under review for fair use: <http://legacy.lclark.edu/dept/chron/stickybizsm08.html>

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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: *against fair use*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: *in*

favor of fair use

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*



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Name: Colin Smith

Description of item under review for fair use: <http://www.sharklet.com/>

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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: *against fair use*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: *in*

favor of fair use

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*



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Virginia Tech ETD Fair Use Analysis Results

This is not a replacement for professional legal advice but an effort to assist you in making a sound decision.

Name: Colin Smith

Description of item under review for fair use: <http://adventuresinbig.wordpress.com/2008/11/11/velcro-up-close-and-personal/>

Report generated on: 12-02-2011 at : 16:58:26

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***

Factor 2

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

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: ***in favor of fair use***

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: ***in***

favor of fair use

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*



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Virginia Tech ETD Fair Use Analysis Results

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Name: Colin Smith

Description of item under review for fair use: Figure 1. Marios Barberoglou, Panagiotis Tzanetakis, Costas Fotakis, Emmanuel Stratakis, Emmanuel Spanakis, Vassilia Zorba, Sophia Rhizopoulou, and Spiros Anastasiadis. Laser structuring of water-repellent biomimetic surfaces. 19 January 2009, SPIE Newsroom. DOI: 10.1117/2.1200901.1441.

Report generated on: 12-02-2011 at : 16:50:51

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*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the

market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*



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Name: Colin Smith

Description of item under review for fair use:

http://caspar.bgsu.edu/~courses/Neuroethology/Lectures/Lect_07SensoryReception.shtml

Report generated on: 12-02-2011 at : 16:28:46

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: ***against fair use***

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: ***in favor of fair use***

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: ***in***

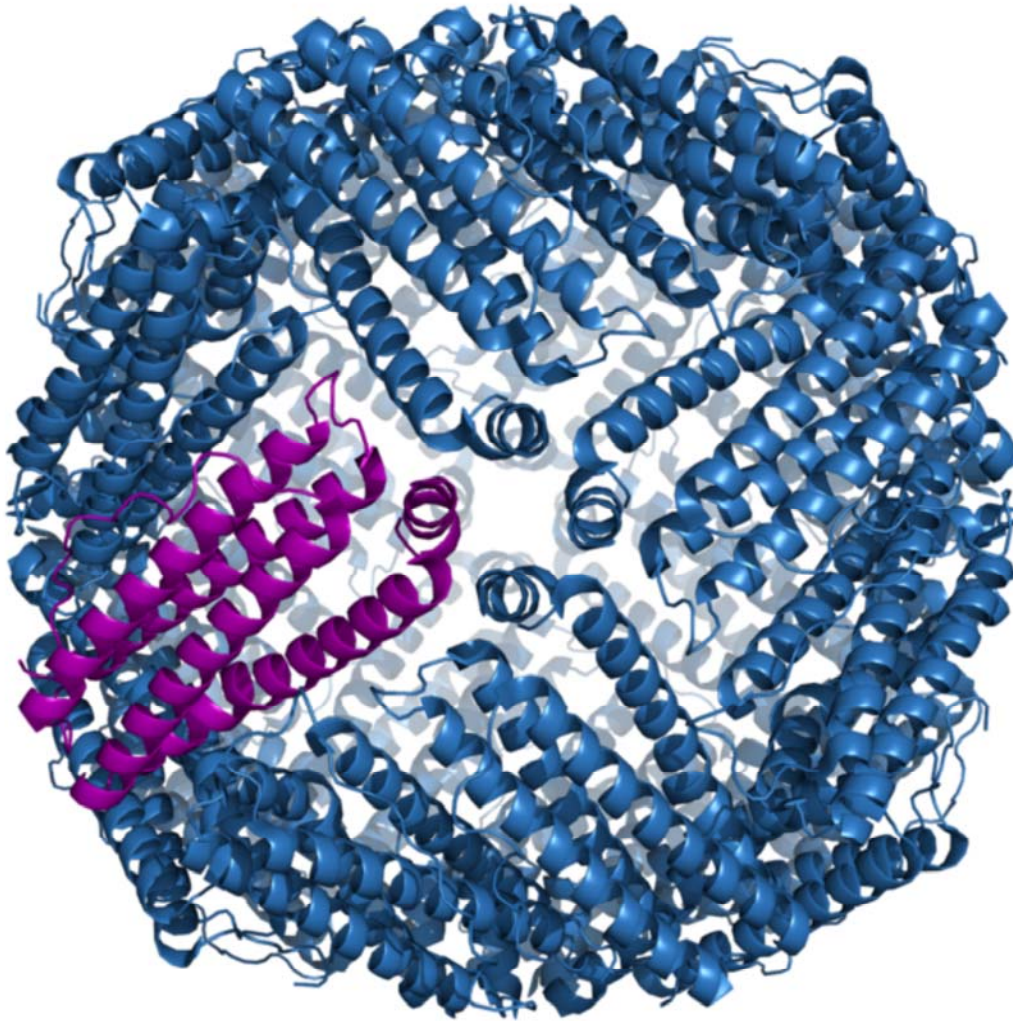
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File:Ferritin.png

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Size of this preview: 600 × 600 pixels. Other resolutions: 240 × 240 pixels | 480 × 480 pixels | 768 × 768 pixels | 1,024 × 1,024 pixels. Full resolution (1,600 × 1,600 pixels, file size: 2.48 MB, MIME type: image/png)



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w:Ferritin protein complex. w:PDB id: 1LB3 (<http://www.rcsb.org/pdb/explore.do?structureId=1LB3>) *Structure of recombinant mouse L chain ferritin at 1.2 Å resolution* Created with w:pymol by me.

Reference: Granier, T., Langlois D'Estaintot, B., Gallois, B., Chevalier, J-M., Precigoux, G., Santambrogio, P., Arosio, P. (2003) *Structural description of the active sites of mouse L-chain ferritin at 1.2 Å resolution* J. Biol. Inorg. Chem. v8 pp.105-111 ,

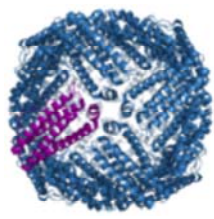
PMID 12459904



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current	01:47, 23 September 2006		1,600 × 1,600 (2.48 MB)	Vossman	(Ferritin protein complex. w:PDB id: [http://www.rcsb.org/pdb/explore.do?structureId=1LB3 1LB3] "Structure of recombinant mouse L chain ferritin at 1.2 A resolution" Reference: Granier, T., Langlois D'Estaintot, B., Gallois, B., Chevalier, J-M.,)

File usage

The following pages on the English Wikipedia link to this file (pages on other projects are not listed):

- Ferritin
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The following other wikis use this file:

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 - Ferritina
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 - ferritin
- Usage on es.wikipedia.org
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- Usage on fr.wikipedia.org
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Description of item under review for fair use:

http://www.rbg.gov.au/science/Evolutionary_Ecology_Research/Ecology_of_Cumberland_Plain_Woodland/woodland_wildlife/vertebrate_animals/myotis_adversus

Report generated on: 12-02-2011 at : 17:04:11

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: *against fair use*

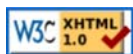
Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: *in favor of fair use*

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*



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Name: Colin Smith

Description of item under review for fair use:
http://archive.fieldmuseum.org/philippine_mammals/species/SP_199.asp

Report generated on: 12-02-2011 at : 17:05:40

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: ***against fair use***

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: ***in favor of fair use***

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: ***in***

favor of fair use

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*



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Name: Colin Smith

Description of item under review for fair use: <http://dwrcdc.nr.utah.gov/rsgis2/search/Display.asp?FINm=eptefusc>

Report generated on: 12-02-2011 at : 17:06:48

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: *against fair use*

Factor 3

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

Factor 4

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: *in*

favor of fair use

Based on the information you provided, your use of the copyrighted work weighs: *in favor of fair use*

