

# Jonathan Konstantine Sakkos

University of Minnesota  
Mechanical Engineering Department  
Bioencapsulation Laboratory  
Email: [sakko001@umn.edu](mailto:sakko001@umn.edu)  
Website: <http://biogels.umn.edu>

## EDUCATION

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### Ph.D. Candidate

2012 – Fall 2017  
(expected)

### University of Minnesota, Minneapolis, MN, USA

Ph.D. candidate in Mechanical Engineering

Advisor: Alptekin Aksan, Ph.D.

Thesis: “*Engineering Biocatalytic Materials: Encapsulation Systems for Bioremediation*”

### B.S. Degree

2005-2009

### University of Portland, Portland, OR, USA

B.S. degree in Mechanical Engineering

## PEER-REVIEWED PUBLICATIONS

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1. B.R. Mutlu, **J.K. Sakkos**, S. Yeom, L.P. Wackett, A. Aksan, 2016 “Silica ecosystem for synergistic biotransformation,” *Scientific Reports*, **6**, 27404.
2. **J.K. Sakkos**, D.P. Kieffer, B.R. Mutlu, L.P. Wackett, A. Aksan, 2015 "Engineering of a Silica Encapsulation Platform for Hydrocarbon Degradation Using *Pseudomonas* sp. NCIB 9816-4", *Biotechnology and Bioengineering*, 113 (3), 513–521.

## MANUSCRIPTS IN PREPARATION

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1. **J.K. Sakkos**, L.P. Wackett, A. Aksan, “Bioregeneration of adsorbent silica gel for environmental remediation”
2. M. Schwab, C. Bergonzi, **J.K. Sakkos**, A. Aksan, M. Elias, “Encapsulation of lactonase expressing bacteria for biofilm prevention”
3. R. Han, **J.K. Sakkos**, B.R. Mutlu, A. Aksan, M. McAlpine, “3d printing of silica-encapsulated bacteria”

## PATENTS

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1. Radian, A., Mutlu, B. R., **Sakkos, J. K.**, Aksan, A., Wackett, L. P., “*Compositions Including A Silica Matrix And Biomaterial, Methods Regarding The Same And Uses Thereof*”, U.S. Patent Application Number 14/883,053

## CONFERENCE PRESENTATIONS

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1. **J. K. Sakkos**, D. P. Kieffer, B.R. Mutlu, L. P. Wackett, A. Aksan, “Design of Porous Silica Gels for Bioremediation of Aromatic Hydrocarbons,” Northeast Bioengineering Conference, Troy, NY, 2015.

2. **J. K. Sakkos**, D. P. Kieffer, B.R. Mutlu, L. P. Wackett, A. Aksan, "Design of Porous Silica Gels for Biodegradation of Aromatic Hydrocarbons," Battelle Bioremediation Symposium, Miami, FL, 2015.
3. **J. K. Sakkos**, D. P. Kieffer, B.R. Mutlu, L. P. Wackett, A. Aksan, "Organic Modification of Silica Gels with Encapsulated *Pseudomonas sp.* NCIB 9816 for Enhanced Biodegradation of Aromatic Hydrocarbons," Materials Research Society Fall Meeting, Boston, MA, 2015.
4. B. R. Mutlu, **J. K. Sakkos**, S. Yeom, L. P. Wackett, A. Aksan, "Silica ecosystem for synergistic biotransformation," University of Minnesota MnDRIVE Environment Symposium, Minneapolis, MN, 2016.
5. **J. K. Sakkos**, L. P. Wackett, A. Aksan, "Microbial Regeneration of Adsorbent Silica Gel for Sustainable Treatment of Environmental Pollutants," Summer Biomechanics, Bioengineering, and Biotransport Conference, National Harbor, MD, 2016.
6. G. Heo, **J. K. Sakkos**, S. Yeom, L. P. Wackett, A. Aksan, "Bacterial Growth Inside Reversible Ca-alginate Beads Encapsulated in a Thin Silica Film", Summer Biomechanics, Bioengineering, and Biotransport Conference, National Harbor, MD, 2016.

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## CONFERENCE PROCEEDINGS

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1. **Sakkos, J. K.**, Kieffer, D. P., Mutlu, B. R., Wackett, L. P., Aksan, A. "Design of Porous Silica Gels for Bioremediation of Aromatic Hydrocarbons" *Northeast Bioengineering Conference*, Troy, NY, USA, 2015.

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## PUBLIC OUTREACH

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1. **Sakkos, J.K.**, r/Science. "Science AMA Series: I'm Jonathan Sakkos, a graduate student in mechanical engineering at the University of Minnesota. I trap bacteria within porous materials for cleaning pollutants from water. AMA!" *The Winnower* **2016**.

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## FELLOWSHIPS AND AWARDS

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1. **Mechanical Engineering Departmental Fellowship**, University of Minnesota, Minneapolis, MN (2012)
2. **Dean's List**, University of Portland, Portland, OR (2008-2009)
3. **President's Scholarship**, University of Portland, Portland, OR (2005-2009)

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## UNDERGRADUATE STUDENTS SUPERVISED

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1. Kanav Khosla (01/13-05/13)
2. James Bienieck (09/13-06/14)
3. Amanda Eidem (01/13-01/14)
4. Daniel P. Kieffer (12/13-12/15)
5. Meera Harihara (01/16-present)

## **PROFESSIONAL EXPERIENCE**

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- 1. Product Engineer**, Columbia Steel Casting Co., Portland, OR (2009-2012)
- 2. Product Engineer-Intern**, Columbia Steel Casting Co., Portland, OR (2007-2009)
- 3. Engineering Tech. I**, County of Sonoma, Santa Rosa, CA (2006)