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## Growth-induced self-organization in bacterial colonies

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### Citation

You, Z. (2019, June 25). *Growth-induced self-organization in bacterial colonies*. Retrieved from <https://hdl.handle.net/1887/74473>

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**Issue Date:** 2019-06-25

# Curriculum Vitæ

I was born in 1989 in Fujian, a province in Southeast China. It was in this beautiful province that I received my early education, including primary, middle, and high schools. After that, I went to Beijing for my undergraduate studies, at Beijing University of Posts and Telecommunications, where I was trained, for the first time, as a physicist. My academic life continued at Beijing Normal University as a Master student in theoretical physics. In 2015, I was enrolled as a PhD candidate at the Lorentz Institute, Leiden University. Under the supervision of Dr. Luca Giomi, I studied theoretically the growth of bacterial colonies, endeavouring to understand the self-organization from the perspective of a physicist. In the nearest future, I will continue my exploration in soft&bio-mechanics as a postdoc at the University of California at Santa Barbara, USA.



# List of Publications

1. *Characteristics and applications of two-dimensional light scattering by cylindrical tubes based on ray tracing*, Z. You, D. Jiang, Z. Hou, and J. Xiao, *Am. J. Phys.* 80(8), 688-693 (2012).
2. *Analysis of light scattered by a capillary to measure a liquid's index of refraction*, Z. You, D. Jiang, J. Stamnes, J. Chen, and J. Xiao, *Appl. Opt.* 51(35), 8341-8349 (2012).
3. *Multiple beam interference model for measuring parameters of a capillary*, Q. Xu, W. Tian, Z. You, and J. Xiao, *Appl. Opt.* 54(22) 6948-6954 (2015).
4. *Geometry and mechanics of microdomains in growing bacterial colonies*, Z. You, D.J.G. Pearce, A. Sengupta, and L. Giomi, *Phys. Rev. X* 8(3), 031065 (2018).

## **Chapters 2&3**

5. *Statistical properties of autonomous flows in 2D active nematics*, L.M. Lemma, S.J. Decamp, Z. You, L. Giomi, and Z. Dogic, *Soft Matter* 15, 3264-3272 (2019).
6. *Mono-to-multilayer transition in growing bacterial colonies*, Z. You, D.J.G. Pearce, A. Sengupta, and L. Giomi, arXiv:1811.08875, submitted to *Phys. Rev. Lett.*

## **Chapter 5**

7. *Confinement-induced self-organization in growing bacterial colonies*, Z. You *et al.* in preparation.

## **Chapter 4**



# Acknowledgments

I would like to express my sincere gratitude to my supervisor Luca Giomi. Not only has he shaped me as a physicist through his guidance, motivation, and training, but he sets a great role model for me with his in-depth perception and immense knowledge. In addition, the patience and care he showed to my life and my career have made everything much easier during these years. I can not imagine having a better advisor and mentor for my PhD study. I would also like to thank Prof. H. Schiessel for being my PhD promotor, and kindly helping me go through all the necessary administrative procedures. Special thanks goes to Greg Stephens at the Vrije Universiteit Amsterdam. Although he might not know me in person, his talk on the ‘Eigen-worms’ was truly inspiring and has greatly boosted my research in physics.

I would like to thank my collaborator Daniel Pearce, who helped me start up the research at the beginning of my PhD and continuously contributed his wisdom to our research projects. Many thanks to my experimental collaborator Anupam Sengupta, for his knowledge and vision from the experimental perspective. My officemate and groupmate—Koen Schakenraad, definitely deserves a grateful acknowledgment. He has been a great and helpful friend. Aside from his assistance with Dutch documentations, including translating the Dutch summary of this thesis (with Christa Broekhuizen), his explanations of Dutch culture and the Dutch way of thinking have been of great value to me. It’s always fun and informative to discuss or, more precisely, chat with him, about science, culture, history, politics, etc.

I would also like to thank the other members of the Giomi group: Ireth, Jeremy, Leo, Linda, Ludwig, Melissa, Niladri, Piermarco, Richard, and Steven. I felt so lucky to be part of this wonderful team. I really enjoyed all the discussions, conferences, and of course meals, we had together. I would like to thank the Doctorate Committee for their comments and feedback to my thesis. I am indebted to the secretaries at the institute—Fran, Manon, and Marianne, as well as to Leonardo for the IT support. Their assistance has made my work much easier. In addition, I would like to thank my friends: Huibin, Qiang, Ke, Yujie, Weichun, Qi, Donggang, Xuxing, Zujia, Jiangnan, Benny, Debu, Hamed, Rongfang, Yuan, and

many others whose names are not listed here.

Finally, there is my family, who are of great support in my work and my life. I am infinitely grateful for the endless caring from my grandmother and the unconditional support from my parents and parents-in-law. Words cannot describe my gratitude to my wife Ruxue for always being there for me, and my daughter Ziyi, for being so precious.