Growth-induced self-organization in bacterial colonies

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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

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