

Role of surface topography on adhesion of motile bacteria

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Only two decades ago, bacteria were considered as well-characterized biophysical entities, which offered little room for new discoveries. We now know that this picture is truly wrong and naïve. In recent years, bacterial cells have come back to the spotlight due to many bacterial species developing antimicrobial resistance (AMR) even to last-resort drugs. In particular, the way bacterial cells localize near a surface is key to the emergence of several phenomena of biological, ecological and medical relevance, including biofilm formation. Here, I will show how microfeatures on a surface have a non-negligible effect in shaping the propagation and localization dynamics of bacterial cells on the same. Beyond demonstrating the critical role played by surface defects on the near-surface motion of bacterial cells, these results can inspire novel routes to control microbial ecology in natural habitats and devise engineered materials for the control and prevention of bacterial adhesion to surfaces

References

- [1] S. Makarchuk, V.C. Braz, N.A.M. Araújo, L. Ciric & G. Volpe, *Nature Communications* 10, 4110 (2019).

Figures

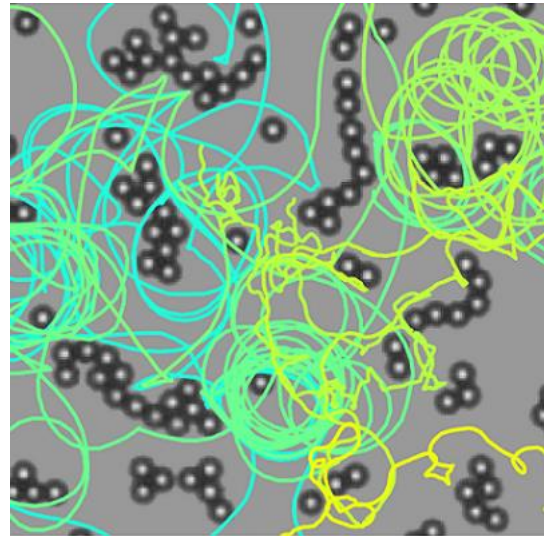


Figure 1. Trajectories of *E. coli* bacteria in complex porous environments.