Investigation of the liquid slip over surface nanobubbles

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Dr. Srinivasa Ramisetti made a short research visit (SRV) to the School of Engineering and Materials Science at the Queen Mary University of London (QMUL) from 28 May to 31 May 2018. The main aim of this SRV is to discuss the development of a new slip length model considering gas rarefaction effects inside surface nanobubbles coated over a solid wall. Figure 1 shows the 3D molecular simulation box with liquid particles and a single cylindrical surface nanobubble confined between two parallel solid walls. This SRV allowed me to learn more about Dr. Botto's group recent work on numerical analysis of the slip length of particle-covered gas-liquid interfaces (A. Vidal & L. Botto, *J. Fluid Mech.*, 813, 2017) and to discuss the possibility of applying their numerical analysis techniques to surface nanobubbles.

During this SRV, I had the opportunity to give a presentation of my current research in a seminar to the members of the School of Engineering and Materials Science at QMUL. Moreover, I also had the opportunity to discuss with Dr. Botto about new research directions e.g., to understand surface nanobubbles growth mechanisms using molecular simulations, with the intention of continuing working towards future collaborations. This SRV was very useful and provided an excellent opportunity to promote knowledge exchange and enhance my research collaboration network.

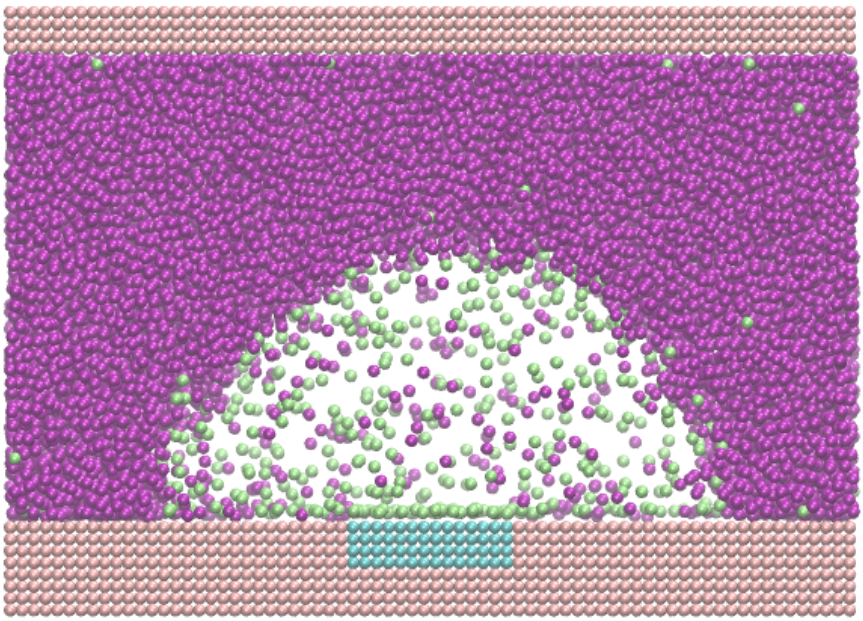

Figure 1: Simulation box with liquid particles over a single cylindrical surface nanobubble confined between two parallel solid walls. The lower solid wall is composed of two different atom types to enable pinning of surface nanobubble to the solid wall.