Azadi Ka Amrit Mahotsav

Join the Webinar

"Nano-gas films for achieving superhydrophobic coating applications"

"08th March 2022 @ 11.00 am"

CSIR–SERC

Understanding liquid slip at solid surfaces is important in micro/nano fluidic applications such as lab-on-chip devices. Several experimental/numerical studies suggested surface nanobubbles act as lubricant to enhance liquid slippage. The effects of average bubble height, surface coverage area of nanobubble, and surface morphology on the effective slip length were investigated previously. However, none have considered the effect of gas rarefaction within surface nanobubbles. Recently, we used non-equilibrium molecular dynamics (NEMD) simulations to investigate the importance of gas rarefaction effect on slip over nanofilms. In this talk, I will present results from NEMD simulations extended to the case of liquid flow over surface nanobubble covering a solid surface and discuss the effect of gas rarefaction within surface nanobubble on liquid slip.

About the Speaker

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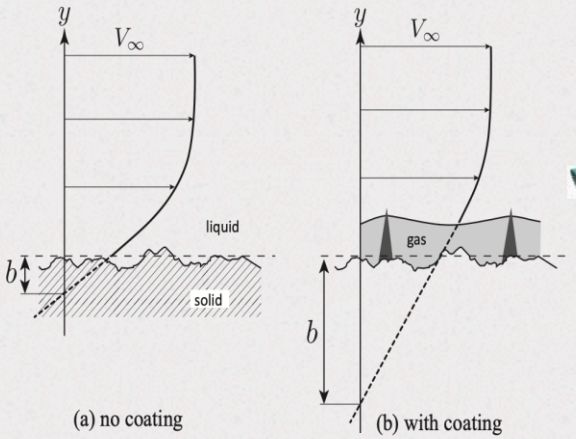
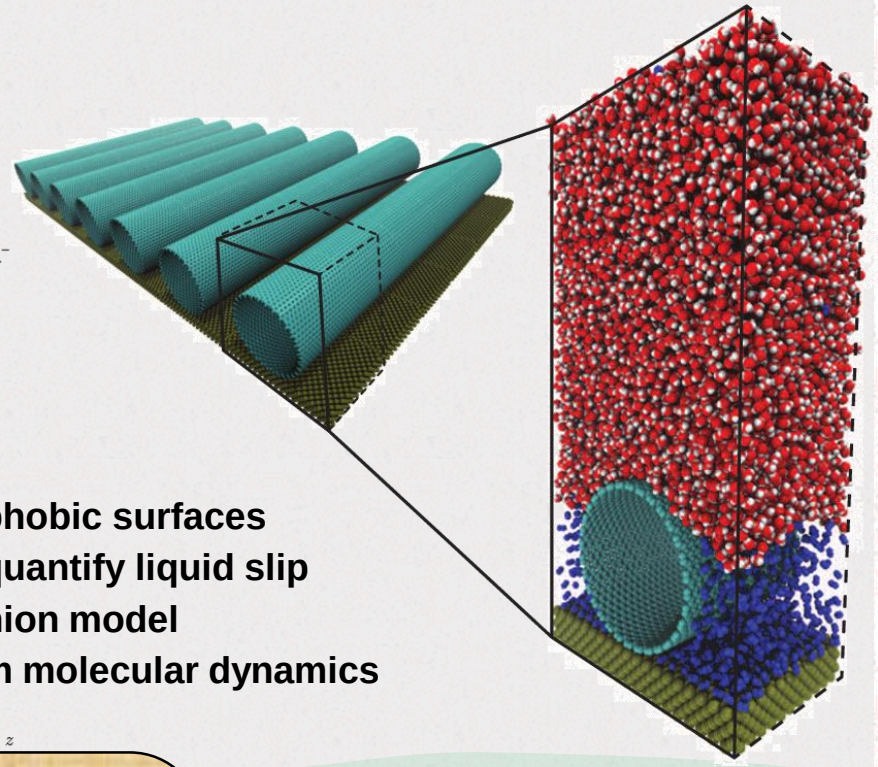
Area of research

Multiscale Modelling, Computational mechanics, High Performance Computing, Friction, Molecular Dynamics





Webinar content

- **Background on superhydrophobic surfaces**
- **State-of-the-art methods to quantify liquid slip**
- **Introduction to slip gas-cushion model**
- **Results from non-equilibrium molecular dynamics simulations**

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