

The complex lives of bubbles revealed

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(PhysOrg.com) -- The mystery surrounding what happens when bubbles collide has finally been busted. And knowing how bubbles bounce apart and fuse together could improve the quality of ice-cream and champagne as well as increase efficiency in the mining industry.

In research led by the University of Melbourne, and published online this week in the [Proceedings of the National Academy of Sciences](#) (*PNAS*), a team of chemical engineers, chemists and mathematicians have united to measure the force between bubbles during a collision.

Associate Professor Raymond Dagastine from the Particulate Fluids Processing Centre (PFPC) in the Department of Chemical and Biomolecular Engineering at the University of Melbourne says knowledge of how bubbles move and collide will impact numerous industries.

“By understanding how bubbles bounce off each other and mould together, we will be able to improve things like the stability of ice-cream and the stability of bubbles in champagne. The findings could also be used to improve water waste treatment, and increase efficiency in the mining industry,” he says.

The force between bubbles during collision was previously too small to measure, however thanks to advances in technology such as nano-fabrication facilities and the [Atomic Force Microscope](#); the team were able to study [bubbles](#) colliding at various speeds.

Research team member Professor Derek Chan from the PFPC and the Department of Mathematics and Statistics at the University of Melbourne says these findings could also eventually be used to study the behaviours of living cells in our bodies.

The project also included researchers from IMRE, IHPC and ICES in Singapore.

Provided by University of Melbourne

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