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There's Wisdom To Be Found in That Wine Glass

An Interview with **Alidad Amirfazli**, Mechanical Engineer, York University
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I generally work on droplet-surface interaction. When you're having for example a glass of wine you may notice that the droplets are climbing up the glass, and this is due to effect of surface tension, and that is in fact what we are focusing on to measure what is the surface tension of different liquids.

For example, you may like to have a paint to perfectly spread over a surface, a soap that would perform better and clean your dishes better so when you're doing a formulation, you would like to know what is the surface tension so it can remove majority of the grease from the surface that you're cleaning.

Pharmaceuticals, because you would like to have the drugs to dissolve in your stomach, and that is another area that is important to understand the surface tension and ability of the materials that are entering your stomach, for example.

Being able to know the material property drove us to see how we can invent an instrument that can be used for surface tension and contact angle measurements.

The product that we've been able to take to the market with the help of VISTA is a smartphone-based surface tensiometry system. It is a system that by taking an image of a droplet it allows to get two different properties for a liquid. One is its surface tension, the second part of it is a measurement of contact angle.

So if we look to have a repellent surface for example, you would like to know the coating that is applied has it increased the repellency and to what degree. Or if you would like to have a system that the liquid spreads, it can be interesting for the cooling systems, for example, that would like your liquid to evenly spread, and our technology allows to measure and determine what is the degree of spreading that exists and what is its contact angle. So that is essentially some of the applications and the way the technology works.