Drink up the future

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(https://www.printfriendly.com/print?url=http://news.nus.edu.sg/node/4742)

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Vocktail allows users to create customised virtual flavours for beverages

For those with very specific preferences when it comes to their beverage of choice, Vocktail, an innovative device designed by researchers at the Keio-NUS Connective Ubiquitous Technology for Embodiments (CUTE) Center (http://cutecenter.nus.edu.sg/), could be the perfect solution.

Vocktail (short for Virtual Cocktail) is an interactive drinking utensil that digitally simulates distinct tastes, smells and colours to create new virtual flavours or augment existing flavours in order to achieve the ideal concoction, without the fuss of physically mixing beverages and ingredients.

> *Using this technology, salt can be delivered in a virtual manner without the health drawbacks. Likewise for diabetic patients, sugar consumption can be reduced dramatically without loss of sensory pleasure. It could also enhance quality of life for chemotherapy patients who have a reduced sense of taste.*
>
> — Dr Nimesha Ranasinghe

Vocktail consists of a cocktail glass that is seamlessly fused into a 3D-printed base, which holds the electronic control module and three micro air-pumps connected to three scent cartridges. It is coupled with a mobile application that enables users to create customised virtual flavours by remotely configuring the taste, smell and colour stimuli via Bluetooth.

The taste of the beverage is altered by two silver electrodes on the rim of the glass which provide controlled electrical currents of different magnitudes and frequencies to the tip of the tongue to simulate salty or sour sensations while drinking. To alter smell, the air-pumps release molecules from the chosen scent cartridges directly onto the surface of the beverage, which is close to the user's nose when drinking. Cartridges can be added or changed depending on the desired smell and are easily refillable, similar to replacing ink cartridges in a printer. Lastly, since visual stimuli forms pre-taste perceptions, users can select their preferred colour with the mobile application which projects an LED light onto the beverage.

The seamless combination of these three stimuli delivers a rich virtual flavour experience, thus altering the perceived taste of the beverage.

The advantages of Vocktail are plentiful. "You could walk into a bar and order a mojito and using the mobile application, customise it to your preference with, say, a chocolate aroma and a hint of banana or mango. Or you could customise water to taste like your preferred flavoured beverage and save the money!" said Research Fellow Dr Nimesha Ranasinghe, who led the team.

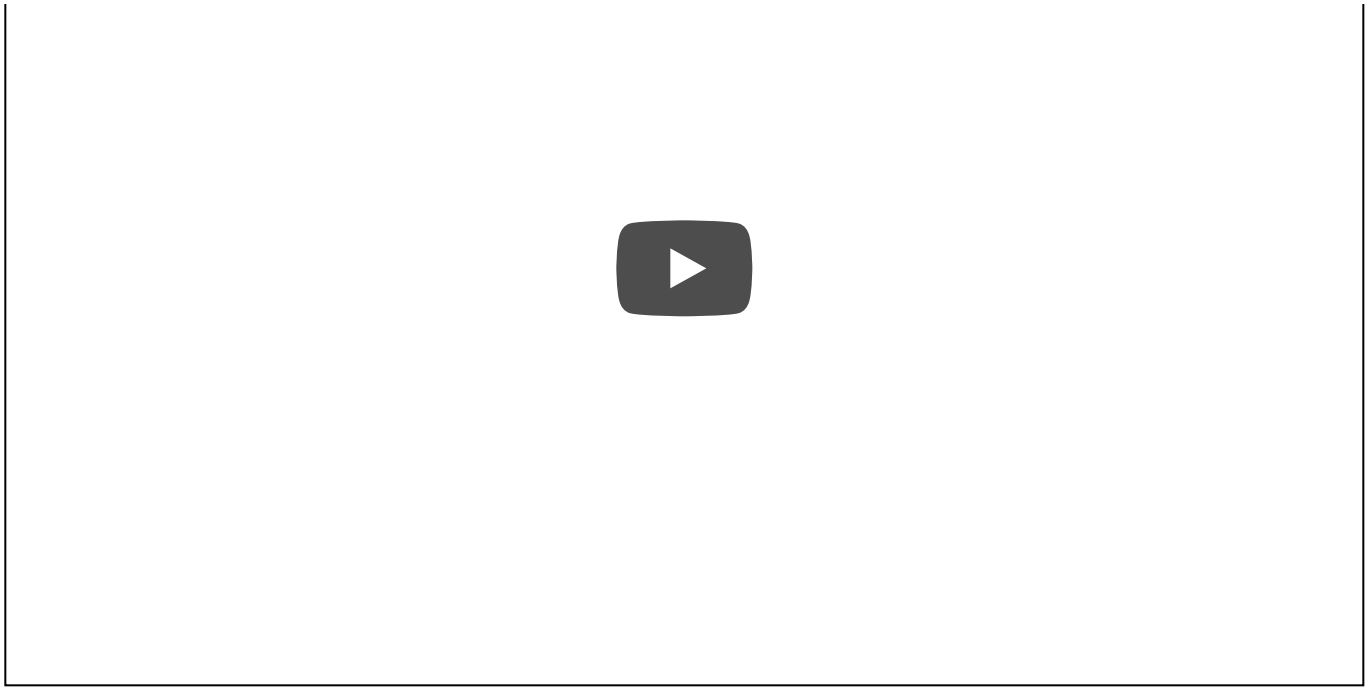
As the mobile application affords users full control, individual creations can be saved as pre-sets for precise replication or for sharing with friends via social networks.

Vocktail could also benefit the elderly who are on a restricted diet because of health conditions such as hypertension or heart disease. "Using this technology, salt can be delivered in a virtual manner without the health drawbacks. Likewise for diabetic patients, sugar consumption can be reduced dramatically without loss of sensory pleasure. It could also enhance quality of life for chemotherapy patients who have a reduced sense of taste. There are many applications that can be explored," added Dr Ranasinghe.

The team is currently working on customising other aspects such as the fizziness and texture of the beverage to create a more realistic experience, and is in talks with companies for mass production.

See media coverage (http://news.nus.edu.sg/news-reports/nus-researchers-design-vocktail-customises-virtual-flavour-sensations).

[MM2017] Vocktail: A Virtual Cocktail for Pairing Digital Taste, Smell, and Color ...



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