

The Art in Science of MicroTAS 2018

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The 2018 MicroTAS conference (the 22nd International Conference of Miniaturized Systems for Chemistry and Life Sciences) took us to Kaohsiung, Taiwan, for an inspiring mix of science and culture. The Art in Science competition, sponsored by *Lab on a Chip* and the National Institute of Standards and Technology, was again a highlight of the meeting, with a collection of 15 excellent images representing the microworld. We were very pleased to have entries in this year's contest cover a broad range of subjects and styles, from abstract, single objects to complex structural detail. And it was a great pleasure to view images and to consider the great breadth of applications that the microfluidics community covers. The committee thanks everyone that submitted work—we had a difficult time choosing among the top submissions.

The field of microfluidics and related technologies offer many opportunities to express the beauty of both scientific discovery and incredible feats of engineering and design. Often, images are powerful because they surprise us. When we dive into the microworld with high-powered imaging tools, we often encounter striking visuals that can be unlike what we observe in the macro world, and, perhaps just as likely, these scenes move us based on an unexpected familiarity. Certainly, these pleasures help to stimulate my own interest in the great work done by my colleagues at MicroTAS.

A highlight of the awards ceremony, held at the Royal Society of Chemistry (RSC) booth, was that the winning image was unveiled on a cake, which was later enjoyed by those visiting the RSC booth for the award ceremony. It was quite appropriate, therefore, that the finalists' images were edible in appearance!

It gave us great pleasure to recognize Nam-Trung Nguyen (Fig. 1) from Griffith University, Australia, as the winner of the 2018 Art in Science Award with the image "The Green Planet" (Fig. 2). The artist's caption for the image describes the seeming simplicity of the object: "the liquid marble is made of a water droplet containing green fluorescent beads and coated with Teflon powder." The judges echoed their enjoyment of the simplicity of the composition, color and form and excellent depth of field that gives it great three dimensionality. We also noted how the image feels almost independent of scale – inviting us to both walk around it and at the same time roll it around in our hand.

The 1st runner up was awarded to Samantha Byrnes from Intellectual Ventures, USA, whose image "Embracing Chaos," (Fig. 3) shows 4 panels with different color schemes applied to images of three-color digital PCR in microdroplets. The judges appreciated the use of colors and repetition as a theme. The composition had the feel of Pop Art, with bright color and repetitions that don't appear to perfectly correspond, and we knew it would have made a delicious cake!

[†] Any opinions or views expressed in this article are entirely those of the author and do not represent the views of the National Institute of Standards and Technology, the journal (*Lab on a Chip*), or the Royal Society of Chemistry.

Shuaizhong Zhang from Eindhoven University of Technology, The Netherlands, earned 2nd runner up with the image “Magnetic artificial cilia with a brush-shaped cap” (Fig. 4). The judges were drawn to great use of color and texture and the repetition in the image. Like all the winning images and any engaging presentation, these images stimulated our desire to know more about what we were seeing and how it was done.

The selection committee for this year’s competition comprised Maria Southall and Simon Neil from *Lab on a Chip*, Manabu Tokeshi from Hokkaido University, and Greg Cooksey from NIST.

Acknowledgements

The Art in Science competition is sponsored and supported by MicroTAS, the Chemical and Biological Microsystems Society (CBMS), the *Lab on a Chip* journal, and NIST. The 2018 award consisted of a monetary prize (\$500), an award certificate, and a coveted front cover of the *Lab on a Chip* journal. Please check the MicroTAS 2019 conference website for further details regarding changes to the competition format and image submission deadline for the next MicroTAS Conference in Basel, Switzerland.

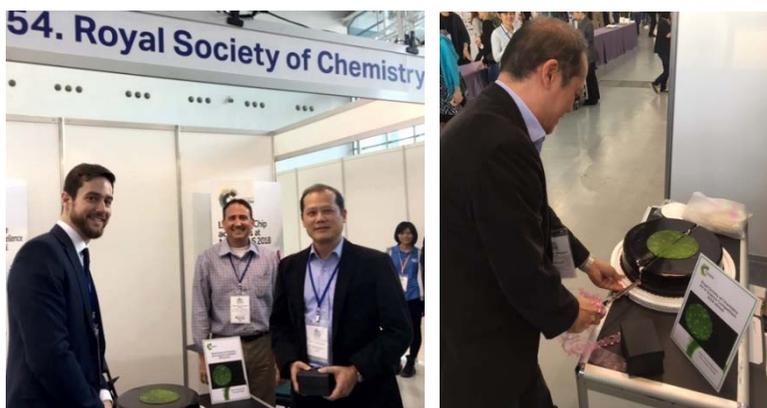


Fig. 1 LEFT Simon Neil (left) and Greg Cooksey (center) present the Art in Science award to Nam-Trung Nyugen at the RSC booth. RIGHT The winner cuts the cake displaying his winning image.

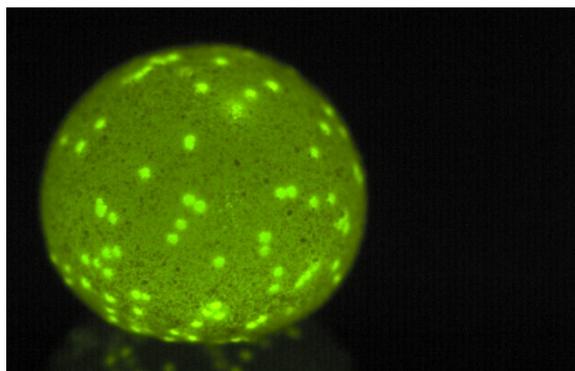


Fig. 2 “The Green Planet” by Nam-Trung Nyugen from Griffith University, Australia, was the winning image from the 2018 Art in Science Competition. The images of a water droplet decorated with fluorescent beads was captured with a colour USB camera.

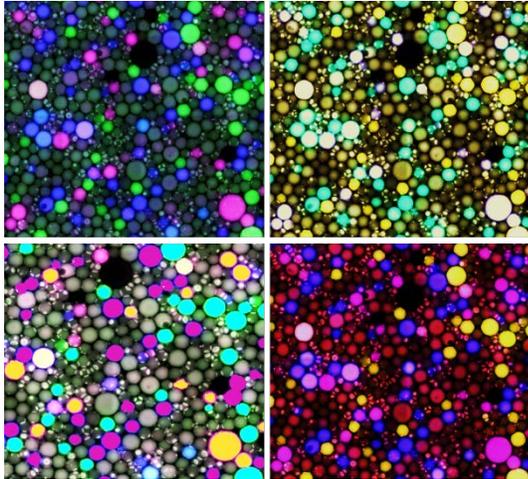


Fig. 3 Samantha Byrnes from Intellectual Ventures, USA, earned 1st runner up with an image called “Embracing Chaos.” The image is a composite image of a triplex, digital polymerase chain reaction (PCR) in polydisperse droplets.



Fig. 4 The 2nd runner up was “Magnetic artificial cilia with a brush-shaped cap” submitted by Shuaizhong Zhang from Eindhoven University of Technology, The Netherlands. The image depicts micromolded magnetic artificial cilia. The artist notes that “In this experiment, additional magnetic particles were added in the fluid, creating elongated magnetic clusters attached to the cilia tips.” For scale, the cylindrical cilia are approximately 350 μm in length and 50 μm in diameter.