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Cover  
Image

## *Bubble flower*



**Bubble flower** by Yoshiki Kaminaka, Yuki Mikamoto and Kazufumi Kaneda.

**Description:** The bubble flower found on the campus of Hiroshima University is a new kind of fantasy plant that has soap bubbles drifted in the wind, just as grasses carry their pollen by the wind. Those who see this flower will remember their childhood and are freed from the tiredness of their hard work.

The flower with thin-film petals was modeled using Blender. The film thickness of each soap bubbles is changed to express different appearances of the interference color. To realistically render the interference color of petals and soap bubbles, we have extended the PBRT renderer to allow full spectral rendering based on wave optics. This extension also allows image based lighting with high dynamic range spectral images. The high dynamic range spectral image was converted from an RGB image of the campus landscape using our newly developed spectral super-resolution method consisting of a deep neural network with ensemble learning.

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