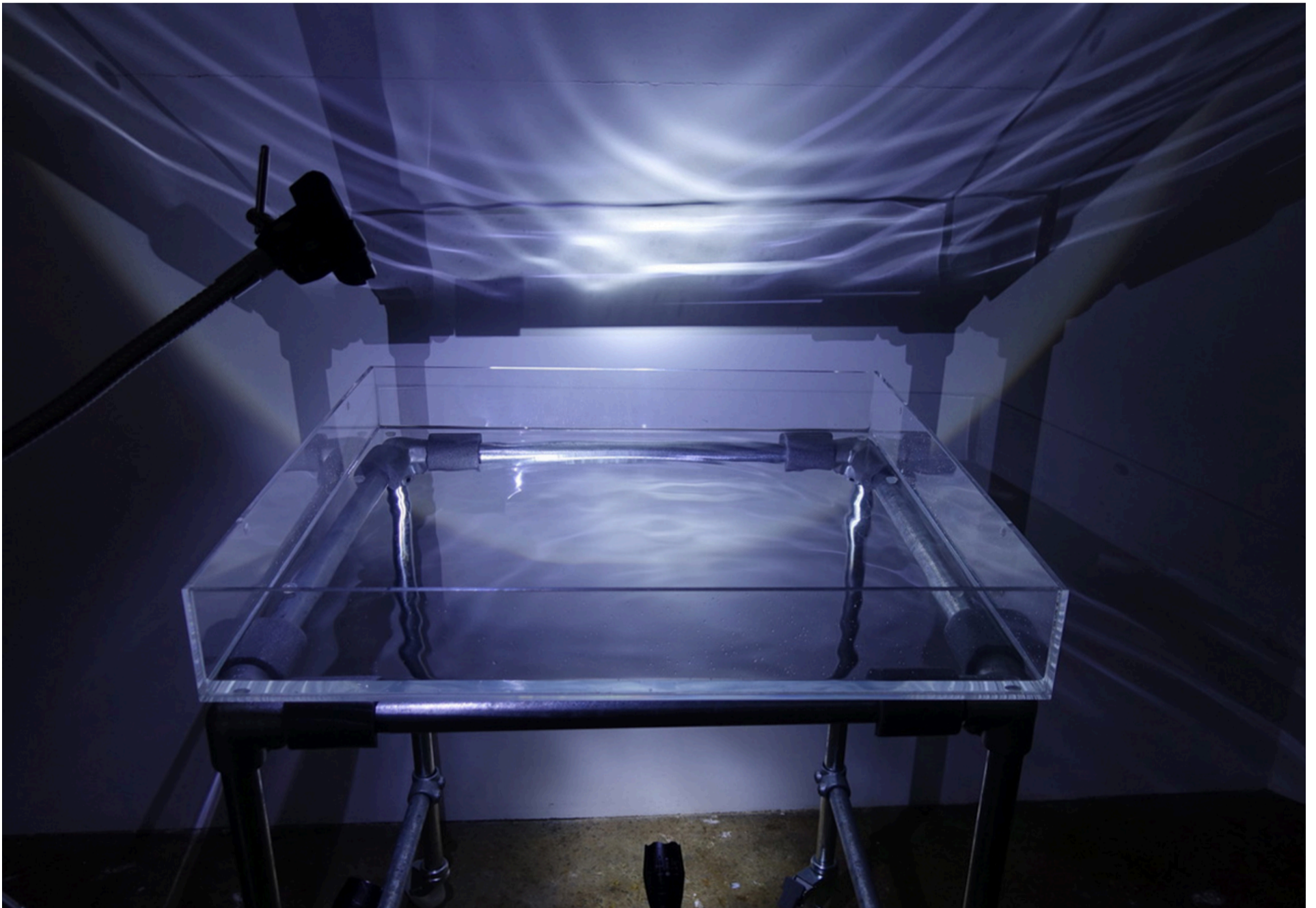




Nicola Rae

#10



Nicola Rae. 'Covalency'. 2023

About the Art Work

Covalency

A series of drips falling into shallow tanks of water create surface waves that interact in complex overlapping patterns. Using focused rays of light, these ripples are refracted and reflected onto the surrounding walls. An analogy is proposed concerning the visualisation of subatomic particle processes as interacting clouds of probability orbiting the nucleus of an atom. The drips generating the ripples could be seen as protons within the nucleus and the waves as a series of nested orbits that radiate to form interacting electron clouds. Valency is the capacity to combine to form molecules and compounds. In this context, valency could be analogised visually as an interacting exchange of electron 'clouds of probability' binding compounds together.

The water molecule is a covalent compound as its oxygen atom shares a pair of electrons with two hydrogens. Covalency reflects the shared nature of the conceptualisation of this project as analogy for 'Valency', through observation and discussion with Paul M. Covalency also refers to the two concepts for this work. The second concept references the calculated probability that dripping taps in the UK lead to the loss of 460 million litres of water per year (or 184 Olympic-sized swimming pools). Using recycled bottle drip irrigation systems developed for watering plants, the physics of altering the speed of the drips has been experimented with over a length of time.

About the Artist

My interdisciplinary art practice engages with an expanded field of experiments through investigating scientific processes, phenomena and environmental change. Sonic visualisation, acoustic equivalence, sonification and feedback loops of acoustic synthesis have all been included in recent experiments.

Collaborating with scientists and their research data has become an important part of my practice both as an artist and as a curator. During 2022 - 2023, I co-curated SPACE Lab [co-creative art astronomy experiments] with astrophysicist Ulrike Kuchner in a year long process of artist-scientist collaborations including workshops with local schools. This was funded by the Science & Technologies Facilities Council and Lewisham Creative Change. Collectively initiating and co-curating exhibitions with others has led to encouraging longer development and set up times that allow for on-site experimentation.

My art practice has been based at the Art in Perpetuity Trust, APT Studios, Deptford since 1995. More recent studies have included an MA in Contemporary Art Theory at Goldsmiths (2009-11), and an MA Art & Design Education at the Institute of Education (2006-8). As a member of the Digital Maker Collective, I co-developed collaborative workshops at TATE EXCHANGE: Tate Modern during 2017, 2018 and 2019.



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