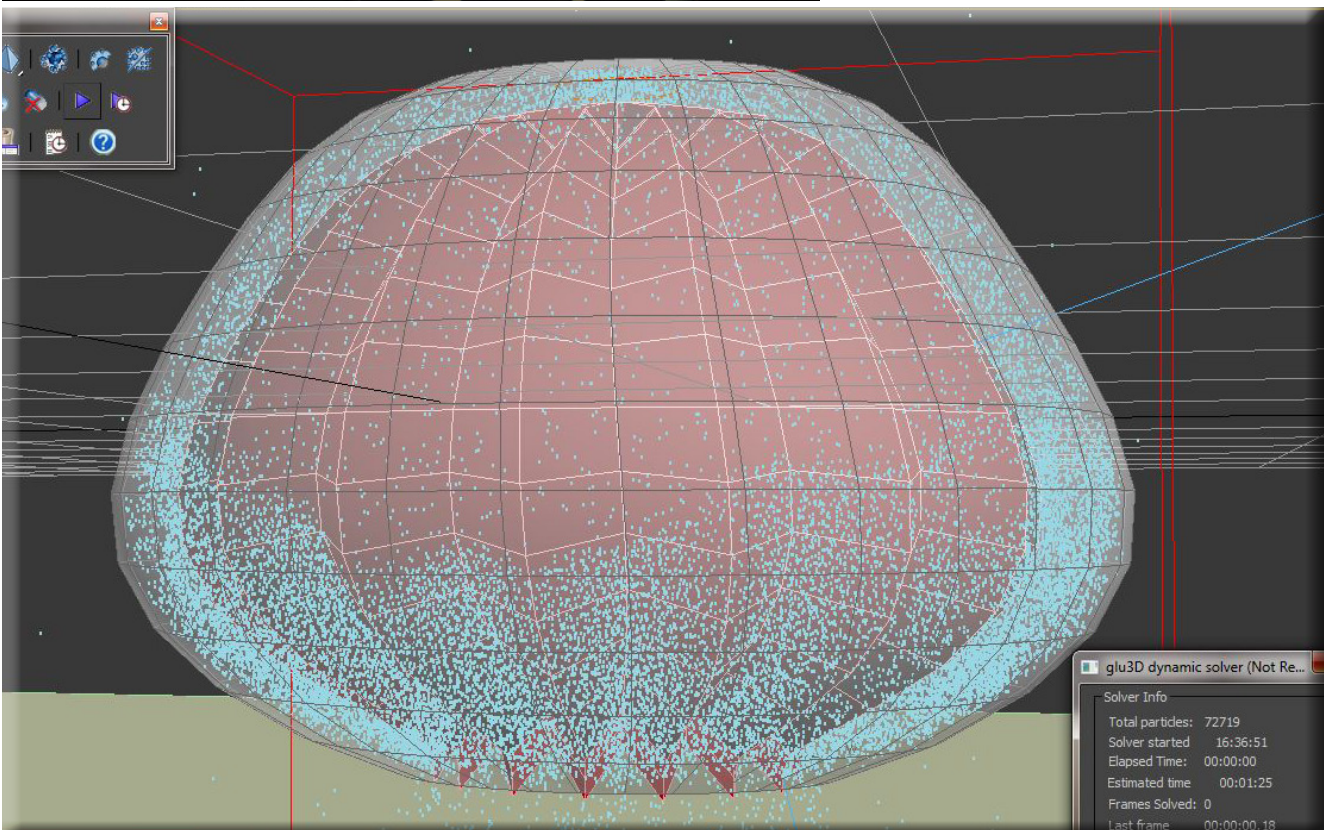
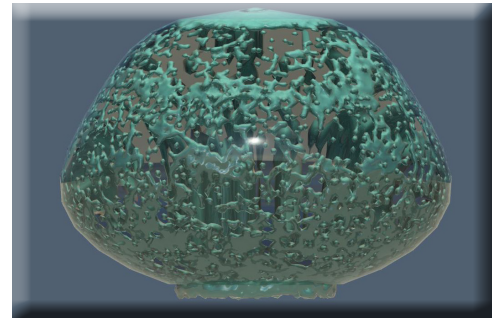
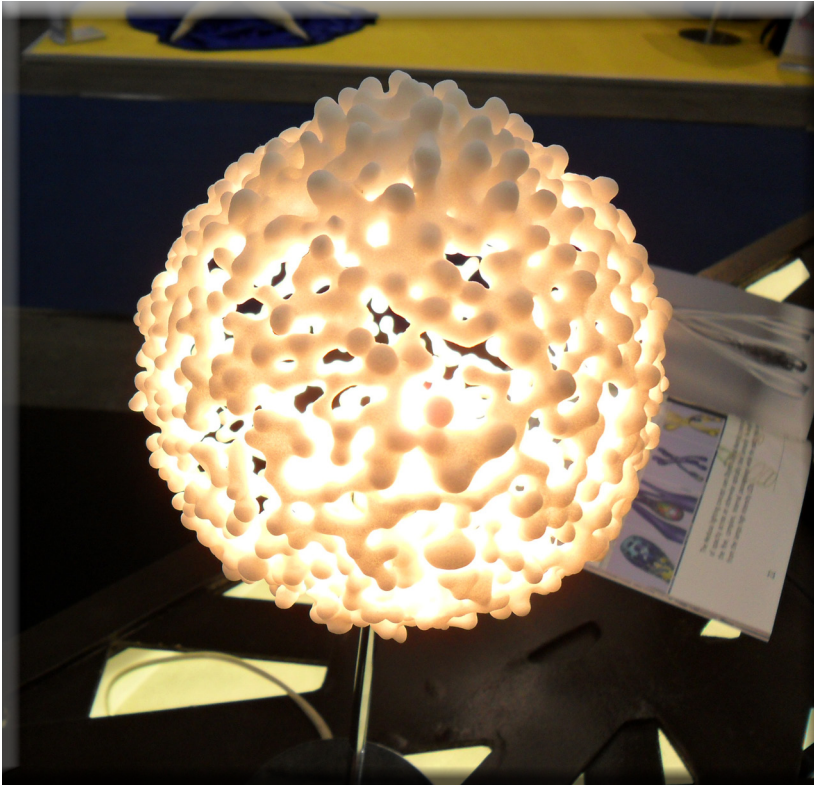


Droplet Lamp Design

Exhibition at EuroMold

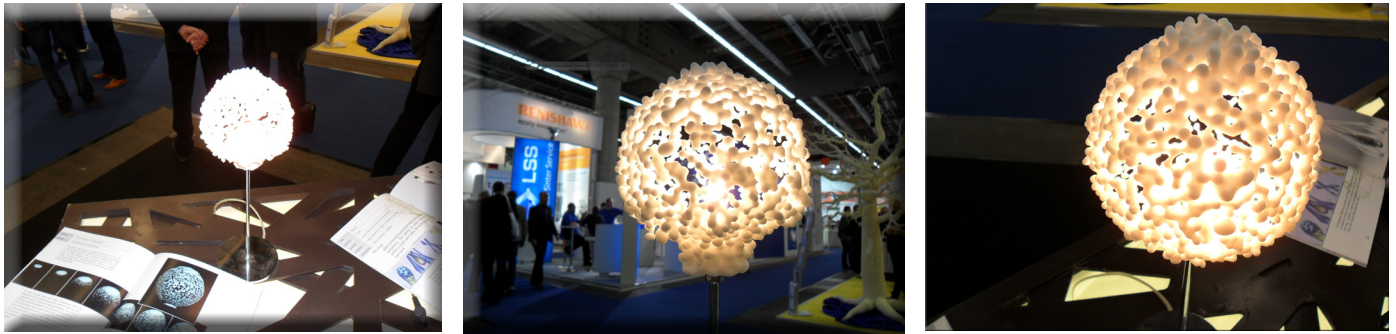
Frankfurt, Germany 27. - 30. November 2011



Droplet Lamp : Exhibition at EuroMold

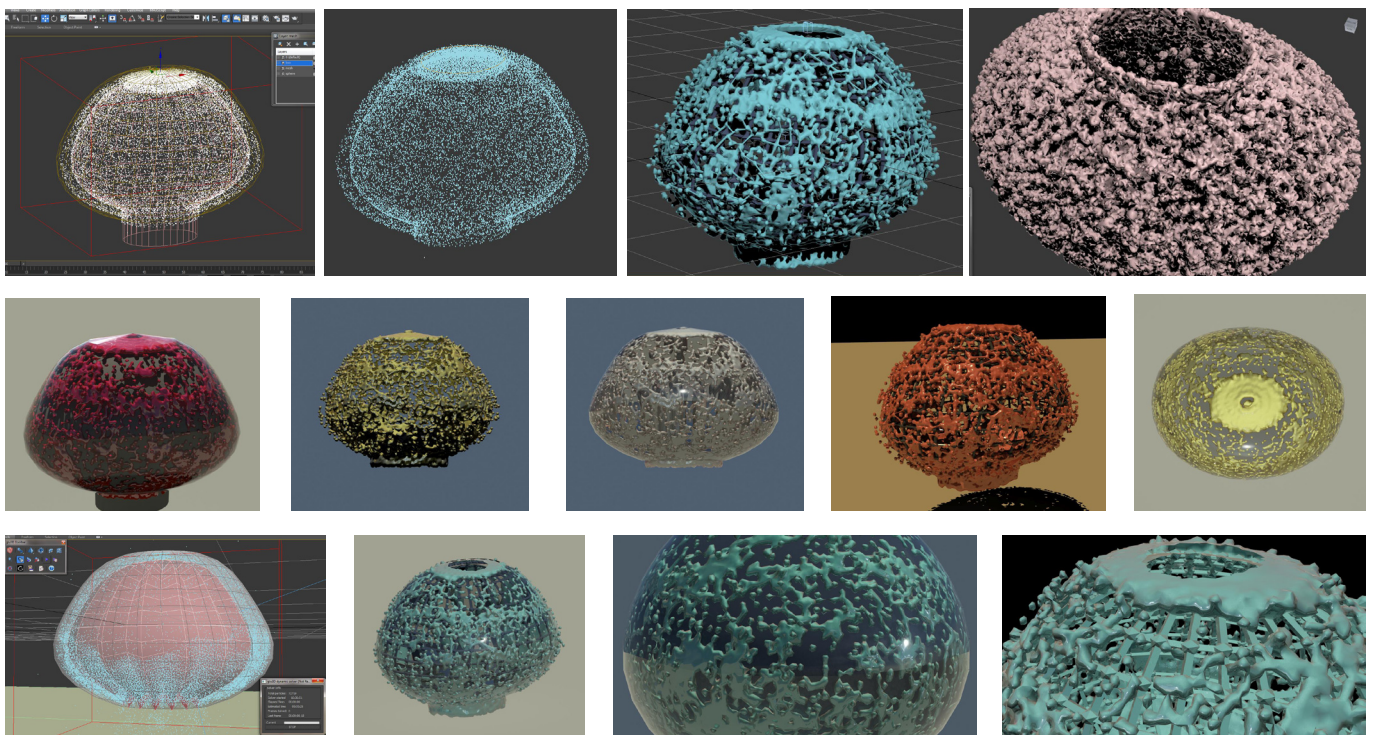
Frankfurt, Germany 27. - 30. November 2011

This paper describes experiments in the use of digital fluid simulation techniques within a product design context. It discusses the adoption and adaptation of virtual modelling tools in 3D creative practice. This work is exhibited at EuroMold, the world-wide fair in Germany for mold making, tooling, design and application development with around 60.000 visitors and lasts 4 days. The fair brings together professionals from design, prototyping and manufacturing.



Images of the Droplet lamp

The droplet lamp series uses the complex and random behaviour of water to produce design variations within preselected boundaries. In order to use water parameters for design iterations, various computational simulation tools developed for diverse industries such as animation, cinema graphics and engineering are initially evaluated. In cinema graphics, methods for the animation and rendering of natural phenomena, such as water, are increasingly popular but requires detail, photo realism and sophistication to meet the demand of leisure industries. In engineering advanced 3D computational fluid dynamics (CFD) software provide prediction and virtual prototyping of liquid behaviour, fluid flow simulation and thermal simulation.



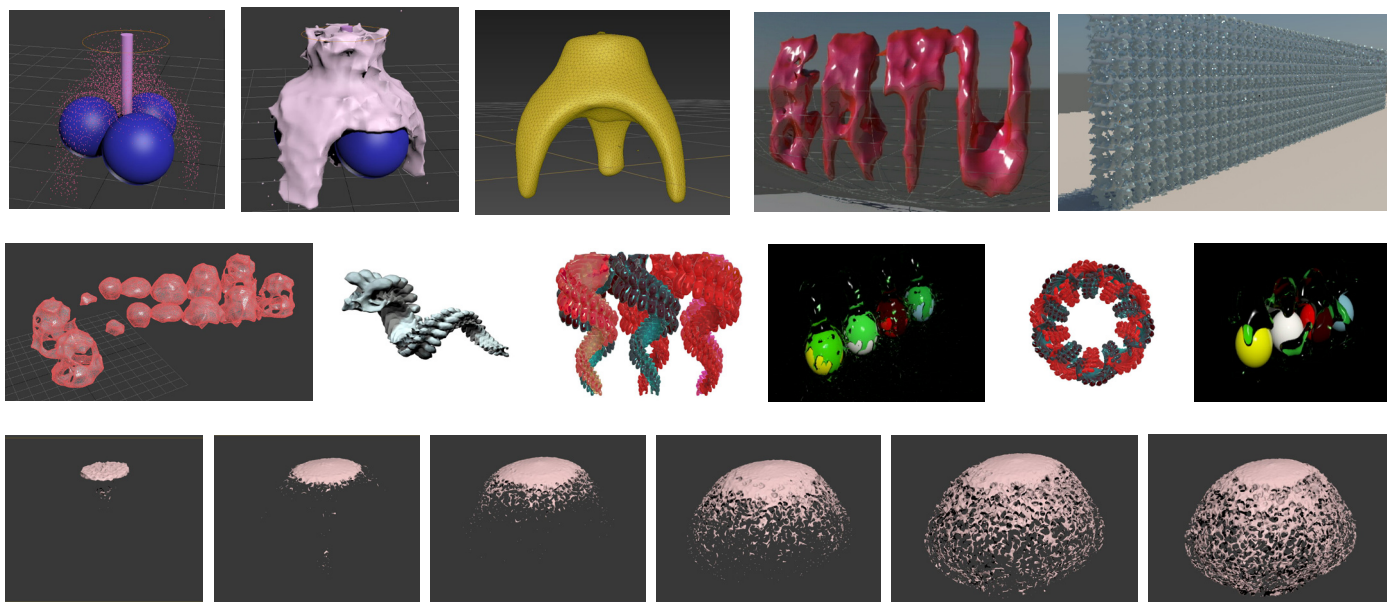
Development of the Droplet lamp using particle simulations

Techniques for the animation and rendering of natural phenomena developed for the film and game industries offer significant potential as 3D tools for other research areas. Although the ability to create 3D water simulations is now common in films and television, using these tools to generate design iterations of product development used in this study is unique.



Images from the Euromold exhibition

As the project has developed, CFD and physically based animation techniques have been employed to generate form and variations between design iterations. In this way the burden of computation is transferred to dedicated plug in packages with intuitive interfaces. In the context of this project, the complex and seemingly random behaviour of water offers significant potential for creating difference. Moreover, given the ubiquity of water and the role it plays in our daily lives, it is something everyone can relate to. As the transition between the digital and the real becomes increasingly simple, the virtual realm is set to become an ever more fruitful creative playground for the design practitioner as shown in this experiment.



Creating water particles and surface construction

The exhibition was a great experience and very successful with a lot of interest not only in the design but also the processes and future direction. The author would like to thank Dr Lionel Dean for his contribution to the project. We also thank EuroMold team for organising such a big event.

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