Abstract Submitted
for the DFD14 Meeting of
The American Physical Society

**Programming self assembly by designing the 3D shape of floating objects** MARTIN POTY, GUILLAUME LAGUBEAU, GEOFFROY LUMAY, NICOLAS VANDEWALLE, GRASP, Physics Department B5a, University of Liège, B-4000 Liège, Belgium — Self-assembly of floating particles driven by capillary forces at some liquid-air interface leads to the formation of two-dimensionnal structures. Using a 3d printer, milimeter scale objets are produced. Their 3d shape is chosen in order to create capillary multipoles. The capillary interactions between these components can be either attractive or repulsive depending on the interface local deformations along the liquid-air interface. In order to understand how the shape of an object deforms the interface, we developed an original profilometry method. The measurements show that specific structures can be programmed by selecting the 3d branched shapes.

Martin Poty
GRASP, Physics Department B5a,
University of Liège, B-4000 Liège, Belgium

Date submitted: 29 Jul 2014 Electronic form version 1.4