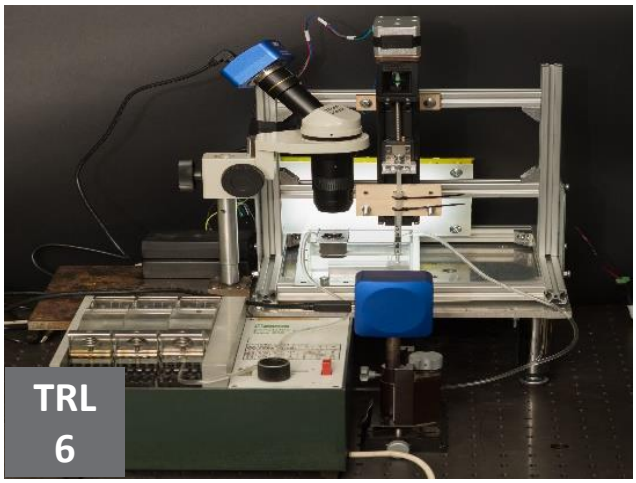
University of Gdańsk
Technology Transfer Office

physics

Automated device for surface energy measurement of solids permanently submerged in liquids

About technology

Proposed device sets up for measurement of dynamic contact angles (CA) by the captive bubble method which is unique in its ability to measure the surface free energy (SFE) of a fully-hydrated solid submerged in a liquid phase (not only aqueous) in situ, without any physical or chemical treatment of the test sample (such as transfer, removal or drying). The surface of investigated solid remains fully submerged and emersion is not required for contact angle measurements, as in case of all research protocols based on classical sessile drop methods, requiring using test fluids and particular surface preparation. Developed device effectively measures dynamic contact angles what allows to determine additional wettability parameters, such as CA hysteresis or Π that provides additional information on the structure of investigated surface (roughness, spatial heterogeneity and surface material accumulation). Device can be widely used inter alia in: prosthodontics, biofouling studies, research teams investigating anti-corrosion coatings, paints, laboratories and research institutes of electrochemical, marine, hydro -engineering, agrochemical, limnologic profile and laboratories dealing with the subject of interfacial phenomena on the surface of solids.



Research Team

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Implementation progress

TRL 6 -Demonstration of the prototype in close to real conditions

Cooperation opportunities

- Sale of property rights
- Licence

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