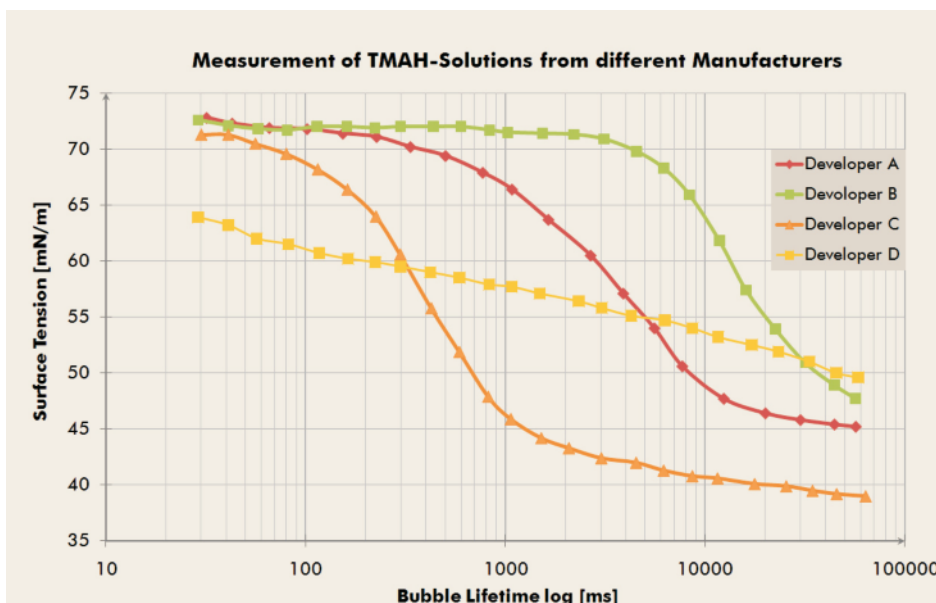


Monitoring of Wetting Characteristics of Etchants and Developers

In order to ensure a complete wetting of the wafer's surface with an etchant and developer, those solutions have to contain surfactants which are able to reduce the surface tension. A reduction of the surface tension is required for an even wetting of all structures in the wafer. The smaller the structures and the higher the aspect-ratio, the more important is an optimal adjustment of the wetting behaviour. Therefore, the time dependent wetting behaviour is essential for receiving a high conformity and homogeneity. Static measurement methods such as the ring and plate method are not appropriate for the analysis of the time dependent wetting behaviour because accurate and reproducible measurements as well as an analysis of the dynamic surface tension are not possible. Furthermore, measuring instruments used for static methods have to be cleaned after a measurement in a very complex way.

Another alternative is offered by SITA Messtechnik GmbH and its innovative tensiometers. Those measuring devices are based on the bubble pressure method and allow surface tension measurement from a highly dynamic up to a quasistatic range. Furthermore, significant test results regarding the wetting ability of solutions and their time dependent behaviour can be received.

The SITA DynoTester is recommended for a general quality control in order to realize measurements within a short time and comparing test results with required values. Random tests analyzing the wetting ability of solutions can be carried out very easy and quick as well.



Monitoring of Wetting Characteristics of Etchants and Developers

The SITA DynoTester is very user-friendly, so there is no expertise necessary for operating the device.

All important functions such as the bubble lifetime, the cleaning of the capillaries, saving and reading out data as well as starting the measurement are available directly by pressing the appropriate buttons.

In case of high process requirements and a needed permanent monitoring of the test results, SITA Messtechnik GmbH recommends individual solutions of the process monitoring system called SITA DynoLine. This system is directly integrated in the process, measures the surface tension at regular intervals and compares data within defined ranges automatically. The data storage has a capacity of at least one year. In case that long-term data storage is necessary, there is an option of transferring data via a serial port to the computer.

Products of SITA Messtechnik GmbH offer different solutions for measuring the surface tension very easy and as flexible as possible. An appropriate measuring device is available for every field application in order to support the quality control with valuable and reproducible data.

