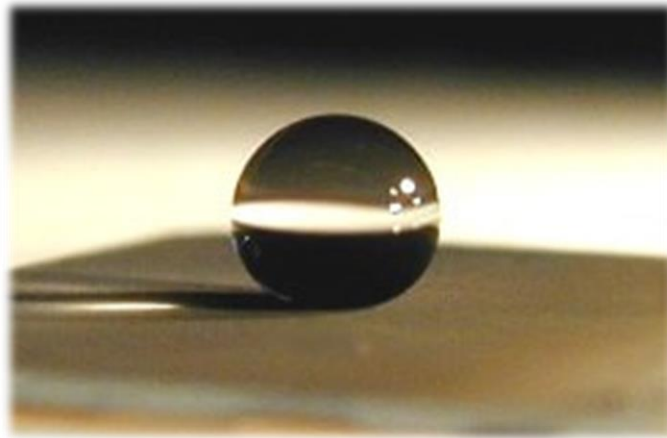


HYDROPHOBIE

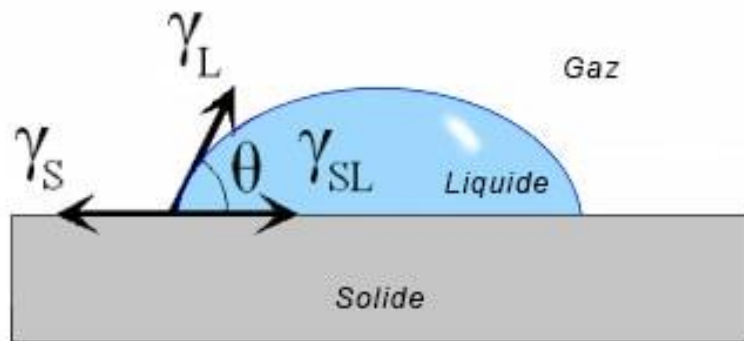
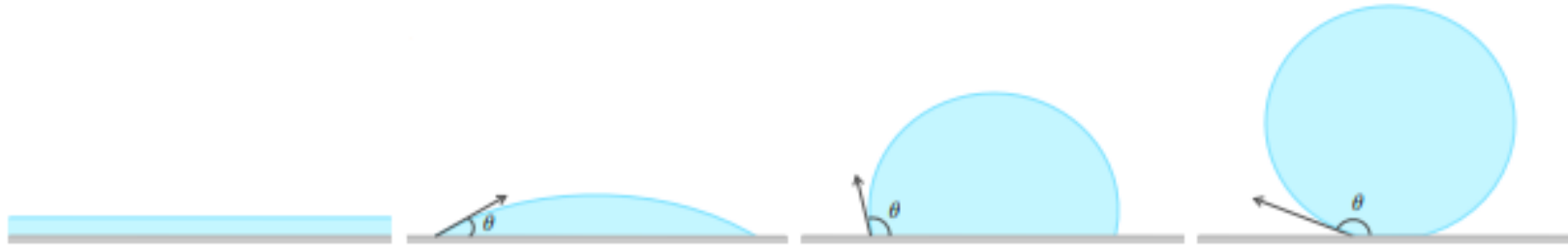
Surfaces hydrophobes



Tables

- L'hydrophobie
 - présentation
- La superhydrophobie
 - présentation
 - la photo-lithographie
- Se rapprocher de la superhydrophobie
 - revêtement de surface
 - traitement chimique
 - restructuration de surface
 - comparaison
- Conclusion et intérêt

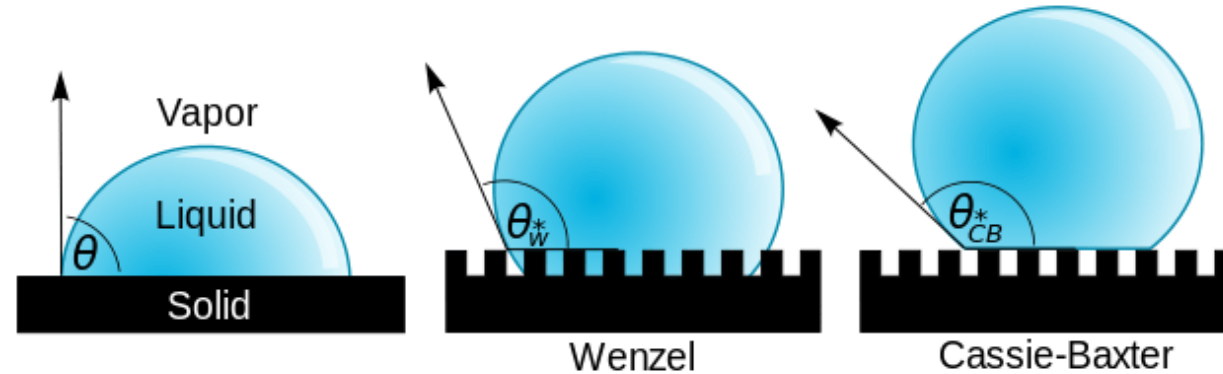
L'hydrophobie



Equation de Young – Dupré :

$$\cos\theta = \frac{\gamma_{SV} - \gamma_{SL}}{\gamma_{LV}}$$

La superhydrophobie

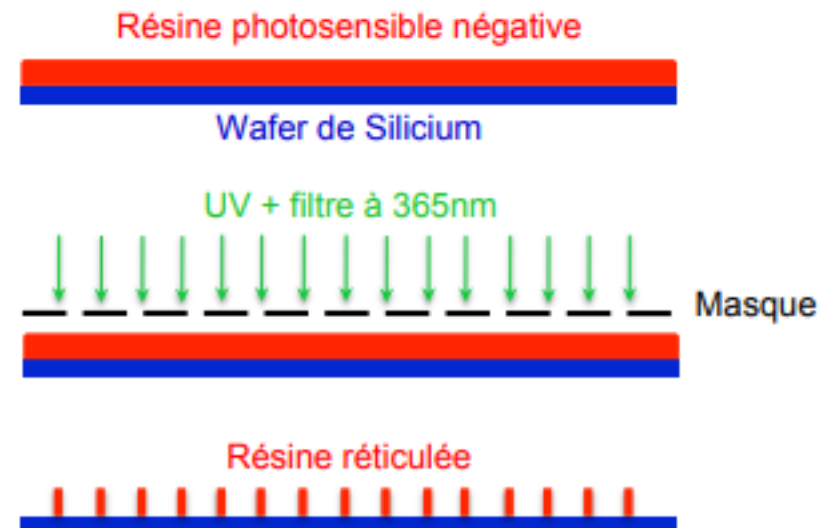
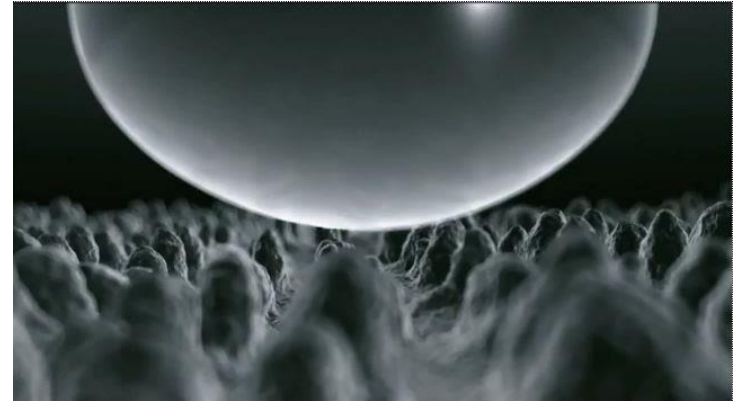


Pour l'état de Wenzel $\cos \theta = r * \cos \theta_c$

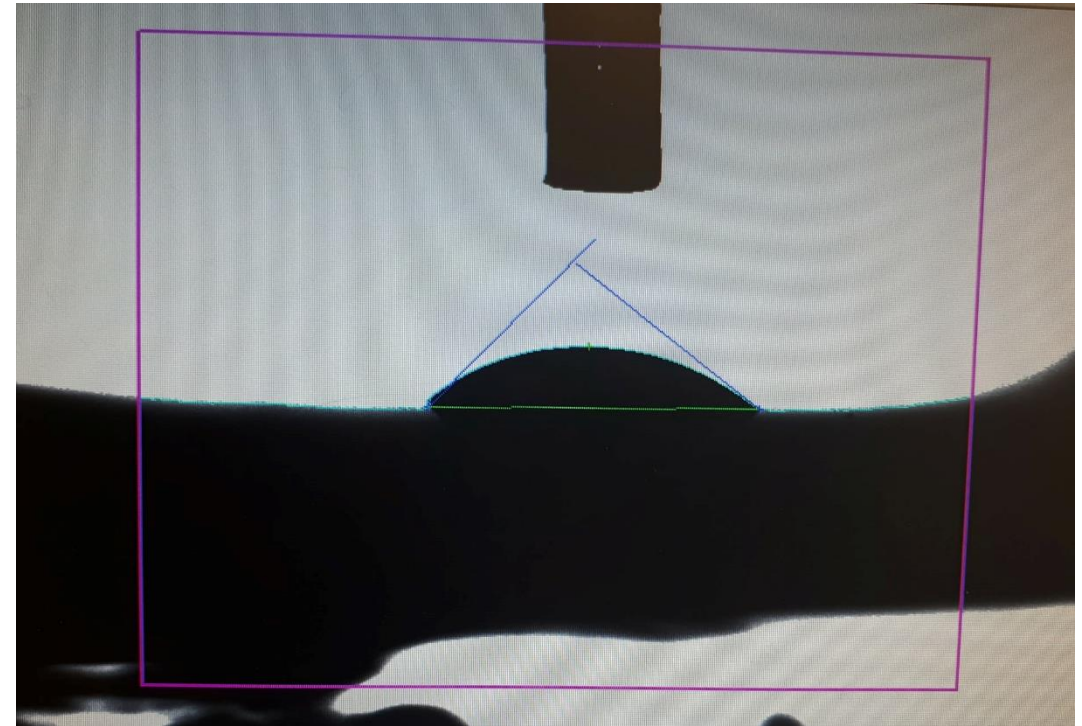
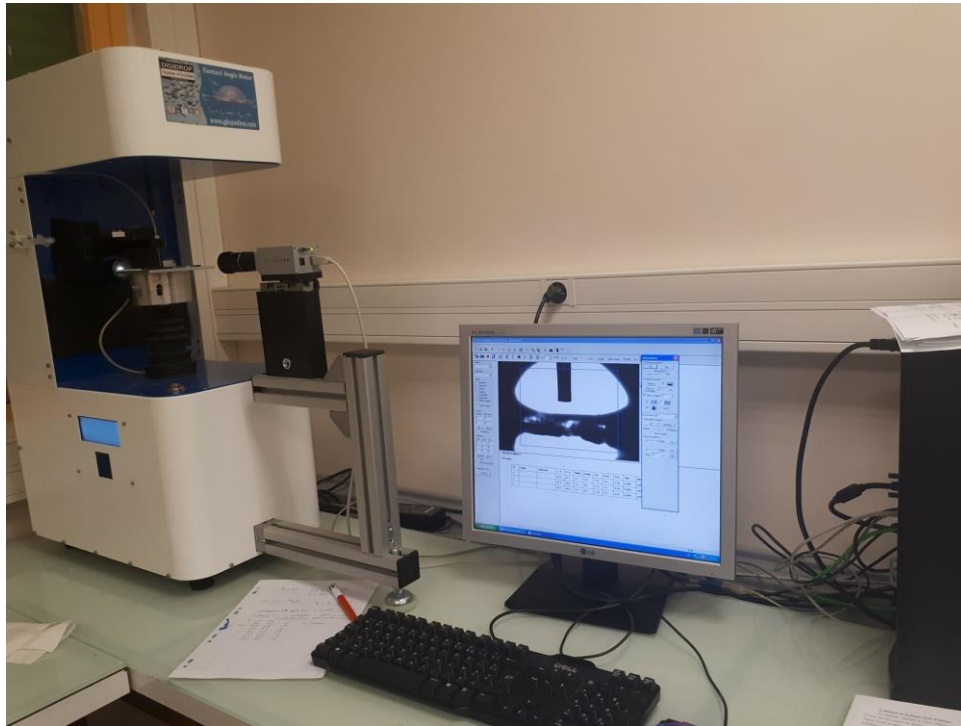
Pour l'état de Cassie-Baxter $\cos \theta = \phi_s (\cos \theta_c + 1) - 1$

Condition de détermination Wenzel ou Cassie : $\cos \theta_c > \frac{(1 - \phi_s)}{(r - \phi_s)} = \cos \theta$

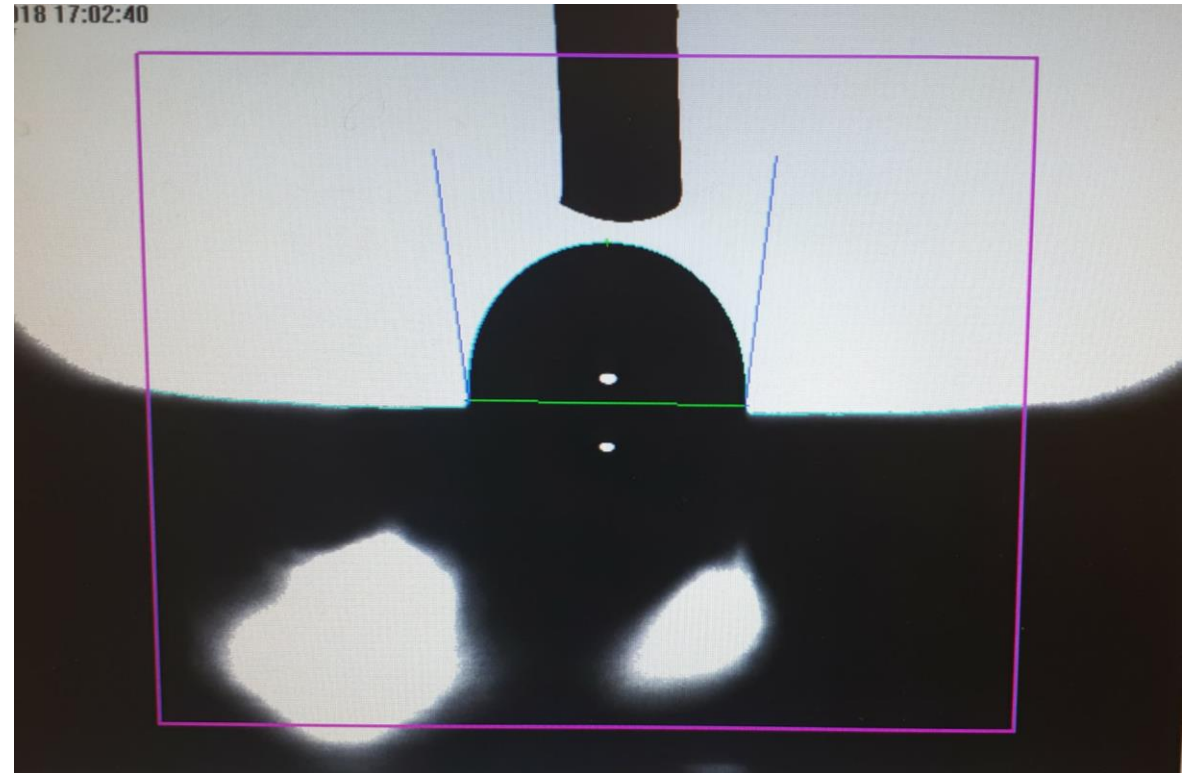
La photo lithographie



Se rapprocher de la superhydrophobie

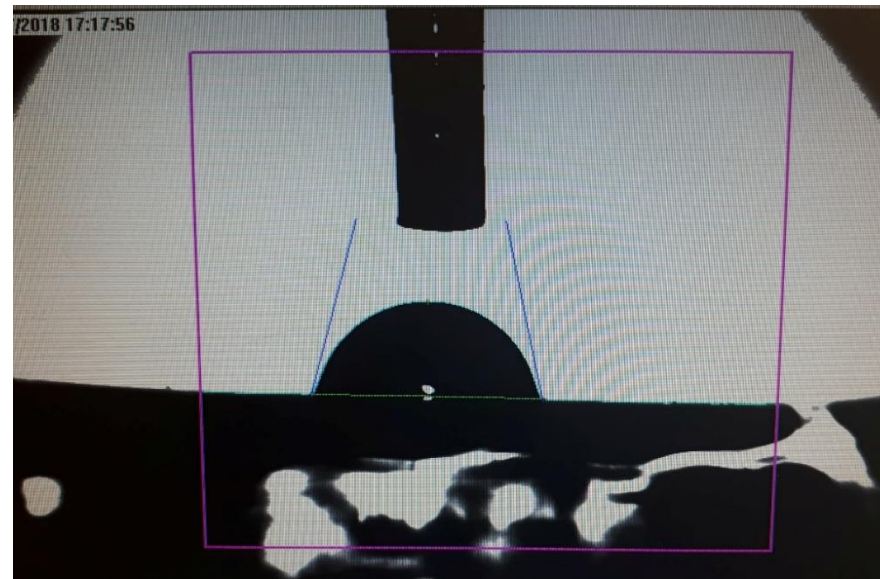
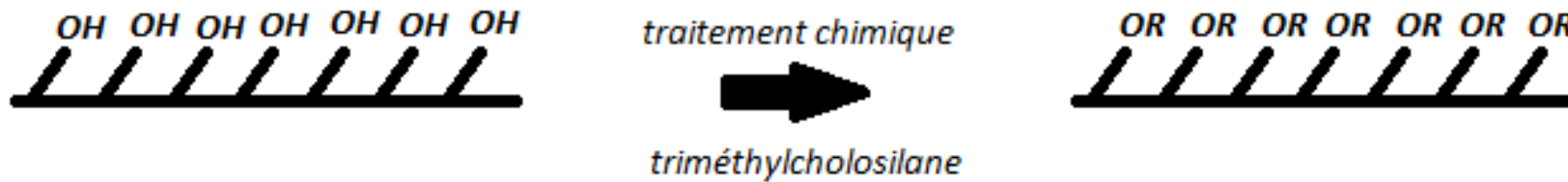


Revêtement de surface



Surfaces	Angle à gauche	Angle à droite
Normal	20,33°	21,76°
Revêtement de surface	94,25°	97,82°

Traitement chimique

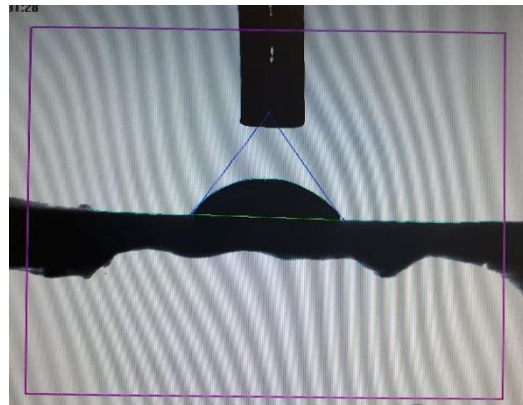


Surfaces	Angle à gauche	Angle à droite
Normal	20,33°	21,76°
Traitement chimique	73,2°	73,98°

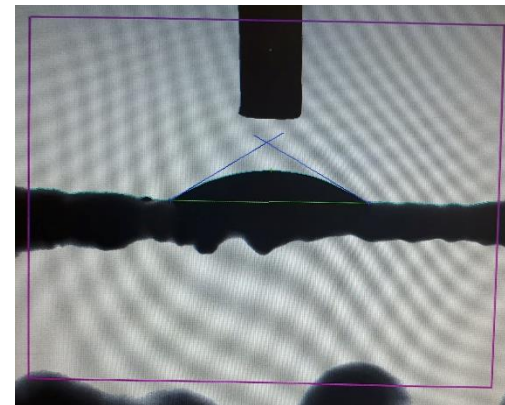
Restructuration de surface



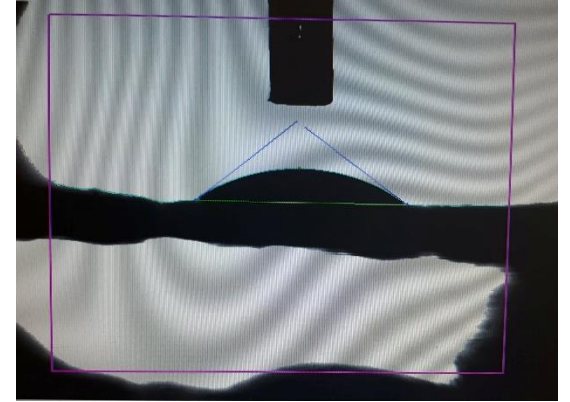
Ponçage 40



Ponçage 80



Ponçage 120

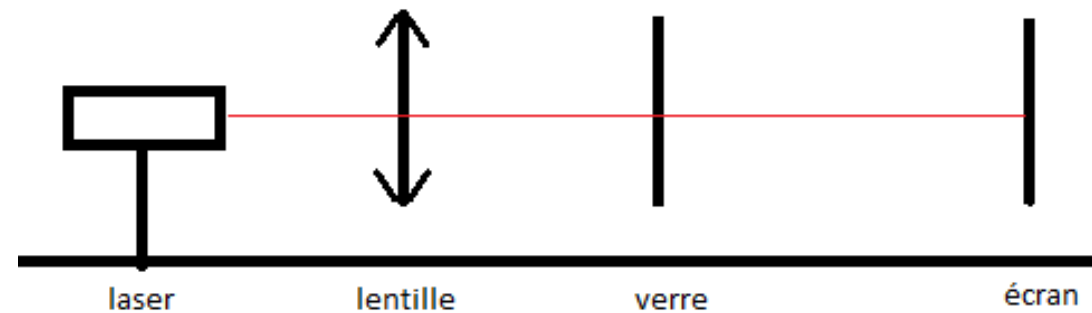


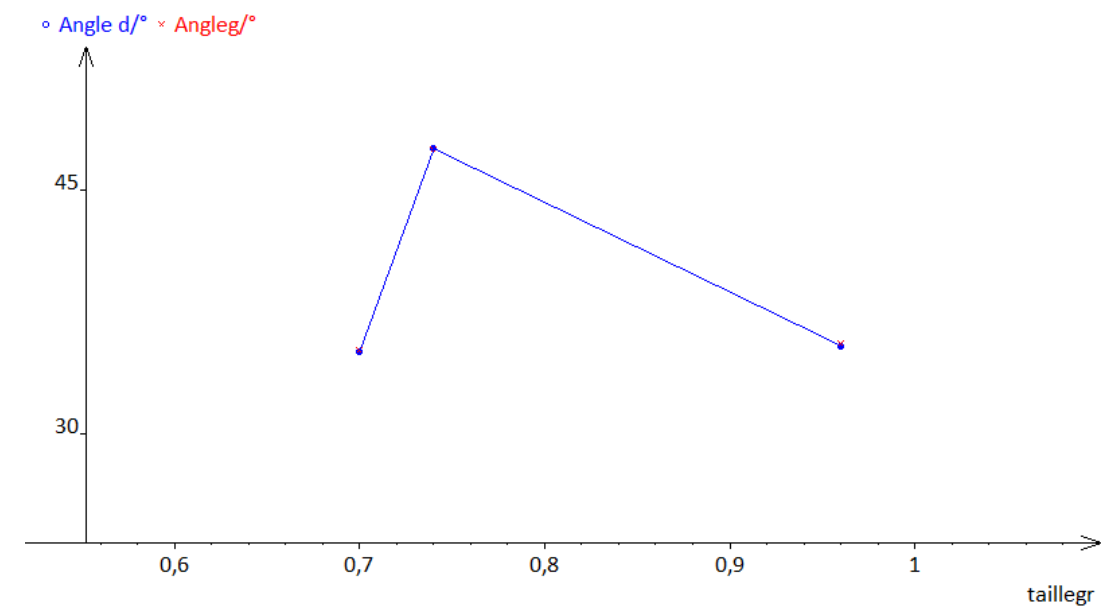
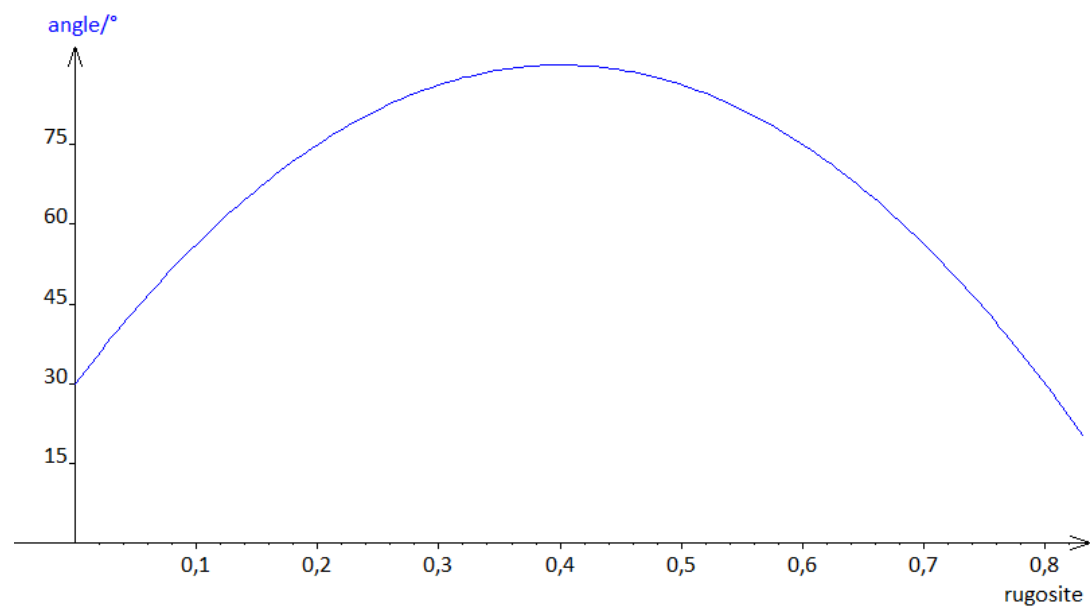
Ponçage 60

Comparaison des angles de mouillage

Surfaces	Angle à gauche	Angle à droite
Normal	20,33°	21,76°
Ponçage 40	35,53°	35,4°
Ponçage 60	35,1°	35,07°
Ponçage 80	47,5°	47,6°
Ponçage 120	30,45°	31,37°

Détermination de la rugosité à l'aide d'une figure d'interférométrie de Speckle





Intérêts

