

## **The graphene-liquid-interface : From fundamental aspects towards chemical and biological sensing**

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Monolayer graphene sheets are highly promising as active material for sensing devices directly operating in liquid. [1] In this context, one of the major challenges is to obtain control over the physics and chemistry of the graphene-liquid-interface in order to optimize the selectivity and sensitivity of such devices. Here we present our approach based on electrochemical modification to tune the properties of this interface. Through field-effect measurements in liquid along with modeling, we corroborate the physicochemical behaviour of this interface and exploit this knowledge in the realisation of chemical and biological sensors. [2] We show that we are able to perform detection of chemical species and biomolecules down to pico molar range in a label-free manner both in steady state and in real-time. [3]

### References

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