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# Fig. 8**Fig. 1: Impact of the slip length on the platelet dynamics.**

**a** Average angle *αc* as a function of *λ*/*b* for a monolayer graphene platelet *a* = 1.7 nm. Data corresponds to pure graphene in water (open disk), pure graphene in NMP (open square), pure graphene in CPO (open triangle) and surface-modified graphene in water (full disks). Error bars on both *αc* and *λ* correspond to standard deviations in MD measurements. **b** Average time period *P* of the orbit, as a function of *λ*/*b*. Data corresponds to a no-slip platelet in water (open disk), no-slip platelet in NMP (open square), no-slip platelet in CPO (open triangle) and surface-modified graphene in water (full disks). Error bars on *P* are the standard deviation measured on several rotations.

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# **Table 1 Slip length *λ* as measured from MD**

|  |  |  |
| --- | --- | --- |
| **Surface** | **Solvent** | **λ (nm)** |
| Graphene | Water | 60.0 ± 5.0 |
| Graphene | CPO | 40.0 ± 5.0 |
| GO (1%) | Water | 4.0 ± 2.0 |

GO stands for graphene-oxide and the percentage is the ratio between oxygen and carbon atoms.