CHIMONO: NANO-OPTICS FOR MOLECULES ON CHIP

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The objective of CHIMONO is to bring together all the new methodologies in the fields of molecular cooling and control with the innovative technological developments brought forward by "AtomChips" as well as nano-optics. What we aim for is a robust and integrable system that would be able to routinely produce, trap, control and detect of molecules in their electronic and vibrational ground state with the ultimate goal manipulating, addressing and functionalizing the individual molecules.
Though we are just six months into the project we have already demonstrated: miniaturized slowing of molecules [1]; photoassociation of bosonic molecules in the nanokelvin regime [2] and single atom detection [3].

[1] S.A. Meek, H.L. Bethlem, H. Conrad & G. Meijer, Phys. Rev. Lett. 100 (2008) 153003
[2] C. Weber et al. submitted to Phys. Rev. Lett.
[3] J. Schmiedmayer et al. to be submitted