Adsorption of Water Molecule on Silicene-FE System GREGORIO RUIZ CHAVARRIA, UNIVERSIDAD AUTONOMA CHAPINGO — After graphene synthesis[1], there have been numerous studies on similar systems in two dimensions so, we have the borophene [2], germanene [3], silicene [4,5], phosphorene [6], etc. Following this line, I do a study that takes the silicene system at its starting point, system to which it add Fe atom. At first, the stability of SILICENE-Fe system is studied, which is stable. Then a water molecule is added to the SILICENE-Fe system, which is captured, as is bounded to the Fe atom. To make this study I used Functional Density Theory, Born-Openheimer Approximation, Atomic Pseudopotentials and Molecular Dynamics.