The aim of PERSEO project is produce second generation bioethanol from the organic fraction of Municipal Solid Waste (MSW). Since now feedstock to produce biofuels is affecting the food market, but recently the prices of this market have increased, therefore reducing the profitability of the bioethanol projects. The composition of organic fraction of MSW is similar to lignocellulosic materials. The cellulose and hemicellulose will be hydrolyzed and fermented obtaining bioethanol. In the process the lignin is separated and used to cogenerate the power and heat necessary for the process. IMECAL, in collaboration with CIEMAT and FORD SPAIN, have developed an experimental Pilot Plant, placed in L’Alcudia (Valencia), with 70Tm/day process capacity to convert organic fraction of MSW to second generation bioethanol and lignin.