Thesis Title	The Synthesis of Leather-Like composites From PVC and Leather Dust
Student	Miss Onusa Sirikhut
Student ID.	44611904
Degree	Master of Engineering
Progamme	Chemical Engineering
Year	2006
Thesis Advisor	Assoc.Prof.Dr.Paisal Nakpipat

ABSTRACT

This research is the synthesis of leather-like composites from PVC and leather dust. The experitments were composed of 2 parts ; firstly, investigation for optimum ratio of leather dust and plasticizer composition by varying the amount of leather dust between 20- 200 phr, size 20, 8-20 and 8 mesh and amount of plasticizer between 10-30 phr; Secondly, studying in comparision the effect of concentration and type of silane coupling agents between aminosilane and vinylsilane for leather dust surface treatment on properties of leather-like composites. The experiments were carried out by mixing and molding PVC and leather dust ingredients using two roll mill at 180^{o}C, resulting composites sheets of 1 mm thickness. The results showed that 20-80 phr leather dust, size 20 mesh and 10 phr plasticizer composites gave suitable properties, tensile strength was in the range of 18.69-11.93 N/mm^{2} ; hardness (shore A) was 68-78 and water absorption was 7.52-43.81%. From silane coupling agents addition experiments to improve the leather-like composites properties, the optimum concentration of aminosilane was found to be 5% by weight of leather dust. In comparision with artificial leather the resulted hardness of the final composite was closer to that of the real leather. Moreover, scanning electron micrographs showed even dispersions of leather dust and open cell structure as found in real leather.