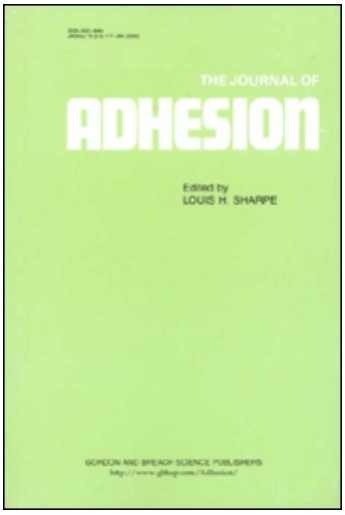

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Conference Review
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Conference Review

Annual Conference on Adhesion and Adhesives— The City University, London, England.

This year saw the Tenth Annual Conference on Adhesion and Adhesives at the City University, London. The Conference has now been established as the focal point for workers in the field of adhesion science, at least in Europe, attracting speakers and delegates from many countries each year.

The scientific programme is arranged to provide both basic scientific and theoretical contributions as well as those more directly concerned with the uses and application of adhesion in a wide range of industries. In addition but as an integral part of the whole, there are ample opportunities for informal decisions and exchange of views.

Proceedings opened with a paper from Dr. R. L. Patrick (Alpha Research and Development Inc.). He discussed the mechanisms of failure of epoxide bonds under conditions of stress corrosion especially with aluminium substrates. The effects of variation of concentration and of particle size of fillers in an amine cured epoxide system were studied and it was shown that the larger sizes had the greatest effect on the crack arresting abilities of the filled adhesives.

Dr. S. J. Gregg followed with a fundamental discussion of the interrelation of adsorption and adhesion. He began by reviewing the nature of the forces involved and went on to consider how these were involved particularly illustrating the effects observed in the behaviour of fine particles. Finally he discussed the application of wetting theories and surface energy considerations in these areas.

After lunch Ir. P. F. A. Bijlmer from Fokker-VFW in Holland described their work on the effects of surface pre-treatment of aluminium for bonding. They had been able to show that the ideal surface for bonding was one with a uniform covering of etch-pit configurations, which was best obtained by chromic-sulphuric acid pickling.

Then Messrs. Bishopp, Noakes and Roberts of Ciba-Geigy described the development and evaluation of an adhesive system for the bonding of vehicle brake shoes to the brake drums. This starts with the production of a suitable

adhesive, which then has to be applied to the components. Then the product has to be tested both by laboratory experiments and by user trials. Once a promising system has been evolved, there follows a series of development and application trials to produce a completely satisfactory system both for production and for use.

On a somewhat lighter note, there followed two short papers illustrating applications of adhesives in art. Mr. J. B. Goode described his work in restoring the Grinling Gibbons carved front cover at All Hallows by the Tower Church. Mr. Dukes and Mr. Greenwood discussed the problems of disintegration arising in the Churchill Memorial screen at Dudley which was made by an appliqué technique bonding pieces of coloured glass onto a glass backing, using an epoxy resin. They had evolved a scheme of surface treatment, and adhesive techniques which should ensure reasonable permanence for the rebuilt screen.

The first day concluded with the Conference dinner at which Professor J. E. Gordon spoke in his usual fashion—light, amusing, sometimes comic but always instructive and illuminating, often erudite.

The second day began with Mr. Bullet and Mr. Prosser of the Paint Research Association discussing the nature and bonding of paint film. Stresses arise within the film for various reasons and these may be sufficient to cause adhesive failure either between the paint film and the substrate or between successive coats of the paint. These stresses can be measured by suitable techniques and deleterious effects reduced by appropriate modification and deleterious effects reduced by appropriate modification of the paint composition both by reducing the actual magnitudes of the stresses and by increasing the adhesive forces.

Mr. French of Taylor Woodrow Construction Company followed with a consideration of the problems caused by water in practical situations in the building industry. Many of these are fundamentally problems of failure of adhesion in the broadest sense. His talk was illustrated by particular consideration of the I warehouse in St. Katharine's Dock where the vaulted basement, below water level, was being converted into a restaurant.

One of the industries which uses ever increasing quantities of adhesives is the footwear trade. Mr. Petit and Mr. Carter of SATRA gave a lucid account of the use of urethane adhesives in this field and the success of various surface treatments to allow high strength bonds to be obtained.

Finally, Mr. H. S. Alsalim, a research student at the City University, spoke about his work on the pre-treatment and bonding of titanium alloys.

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