

This article was downloaded by:

On: 22 January 2011

Access details: *Access Details: Free Access*

Publisher *Taylor & Francis*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## The Journal of Adhesion

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713453635>

## Contents Lists and Abstracts from the China Journal “Technology on Adhesion & Sealing”

**To cite this Article** (1995) 'Contents Lists and Abstracts from the China Journal “Technology on Adhesion & Sealing”', The Journal of Adhesion, 49: 1, 161 – 164

**To link to this Article:** DOI: 10.1080/00218469508009984

**URL:** <http://dx.doi.org/10.1080/00218469508009984>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

# Contents Lists and Abstracts from the China Journal "Technology on Adhesion & Sealing"

**Vol. 14 No. 5 Oct. 10, 1993**

## Contents

Surface Analysis for Microwave Plasma Treated Fluororesins by ESCA .....		
..... Written by Tomoyuki KASEMURA, Yoshikatu OKADA and Masayuki FUJII, Translated by Li Kunfa .....	[1]	
The Study on Adhesion of Metal to Rubber in Vulcanization— Protection and Application of —NCO Group in Polyisocyanate .....		
..... Ma xingfa, Wu Changguang, Wang Zhongping, Jin Yanfen and Wen Xianglian .....	[7]	
An Approach to the Setting-up of an Infrared Optical System with Bonding and Sealing ..... Zhang Jixin .....	[11]	
Properties and Use of the EVA Resin .....	Yuan Guisu and Zhang Zhenggen .....	[17]
The Study of Adhesive of Imitation Porcelain .....	Zhang Hai .....	[24]
Preparation and Application of DH-2 Welding Sealant .....	Wen Shuze and Han Qingguo .....	[27]
Production and Technology of CR/MMA Grafting Neoprene Adhesive .....		
..... Geng Changgen .....	[30]	
Repairing the Lathe Slideway with Bonding Technology .....	Li Zhimin .....	[32]
Application of Adhesion Technology in the Equipment Overhaul of Power Plant .....		
..... Zen Tianshen .....	[34]	
Repairing Forging Hammer Machine Base With Epoxy Concrete .....	Wang Renjun .....	[37]
Urgent Repair on the Working Conveyer .....	Zhang Minhui and Huang Xiaofan .....	[38]
Repairing of the Defect in the Cast .....	Chen Feng .....	[39]
Bonding and Patch up Large-Scale Oil Basin with Oil .....	liu Ximin .....	[40]

### Surface Analysis for Microwave Plasma Treated Fluororesins by ESCA

Tomoyuki Kasemura, Yoshikatu Okada and Masayuki Fujii

(Department of Applied Chemistry, Faculty of Engineering Gifu University,  
1-1 Yanagido Gifu-shi 501-11 Japan)

### Abstract

Three fluororesins (PDVF, PTFE and FEP) were treated with the microwave plasmas which were generated by an electronic cooking range and the surfaces of treated resins were analyzed with ESCA.

The large signal of  $O_{1s}$  at 533 eV and the broad continuous spectrum of  $C_{1s}$  from 295 to 285 eV appeared in the ESCA spectrums for plasma treated resins. The amount of oxygen, which was introduced by the

treatment, increased with the lowering of gas pressure in the plasma treating glass vessel. It was shown that the resin was treated more effectively by the lower treating gas pressure.

In order to obtain the depth profiles, two techniques were employed: (i) argon ion etching and (ii) by varying the electron take-off angle ( $\theta$ ).

(i) The oxygen introduced by plasma treatment decreased rapidly with the going on of the ablation caused by the etching.

(ii) For the FEP immediately after the treatment, the amount of oxygen increased with the decreasing of  $\theta$  (with the shallowing of the analyzable depth) and fluorine decreased. After leaving the treated FEP in the desiccator for 70 hours, the amount of fluorine increased in the region of  $15^\circ < \theta < 60^\circ$  and oxygen decreased, since the fluorine-containing segments, which had a low surface free energy, migrated to the surface of the resin.

From the depth profiles, it was found that the plasma treatment reached to a half of the depth which could be analyzed by ESCA at  $\theta = 90^\circ$ .

**KEY WORDS** Fluorinated polymers, Microwave plasmas, Surface Modification, Contact Angles, Wetting, Peel strength, ESCA.

### **An Approach to the Setting-up of an Infrared Optical System with Bonding and Sealing**

Zhang Jixin

(NO. 803 Research Institute, Shanghai Space Bureau)

#### **Abstract**

This paper relates to an infrared optical system which is composed of several circular optical parts as sensing elements. By applying modern local and foreign bonding and sealing technology, the optical parts which were made of different materials with different expansion coefficients were set up, so that the imaging quality and the sealing requirements are ensured in spite of the variation of high or low temperatures. It is found that Thiokol material has the best characteristics. The technical data and performance of the S-7-1 Thiokol sealant developed by us and the operating process for bonding and sealing can fully meet the specification requirements for the infrared optical system.

**KEY WORDS** Infrared Optical System, Bonding Sealing, Process, Thiokol.

### **The Study on Adhesion of Metal to Rubber in Vulcanization**

— Protection and Application of —NCO Group in Polyisocyanate

Ma Xing fa, Wu Chongguang, Wang Zhongping, Jin Yanfon and Wen Xianglian

(Shan dong Institute of Non-metallic Materials)

#### **Abstract**

Preliminary analysis and comparison between -NCO and protected -NCO with IR and DSC are introduced, and the application of functional group terminated polyisocyanate in bonding agent of metal-to-rubber in vulcanization is also described. The results of 180 degree angle peel test are excellent.

**KEY WORDS** Adhesion, Metal-Rubber, Protected -NCO, Peel Test.

**Vol. 14 No. 6 Oct. 10, 1993****Contents**

Preparation and Application of Acrylic Ester Adhesive for Dry Lamination ..... Dai Molan, Zou Mingguo, Wang Shikun, Zhou Jiulin and Cao Zhenyu .....	[1]
Study on the Latex Textile Adhesive .....	Zhang Renlan and Fan Chunshan [7]
Application of PANa Resin Binder in Foundry Production .....	Ji Gangchang and He Jiyun [9]
Study on the Mechanism of the Adhesion Co-ordinate Bond by X-ray Photoelectron Spectroscopy .....	Zhai Haichao and Weng Xixiang [17]
The Preparation of a Solution of Sodium-Naphthalenide and Treatment of Polytetrafluoroethylene .....	Yu Min and Li Zidong [22]
Development of Anaerobic Adhesives and Sealants Series GY in China .....	Yang Yingtai [25]
Study and Manufacture of the Adhesive used for Seedling-Growing Container of Plastic film .....	Zhang Zhiping, Zhang Suhua and Su Xueying [29]
Development of Black Pigment to Use for Epoxy Resin .....	Zhu Zhenguo [31]
Study and Manufacture of the CD-6 Type Test Instrument for Holding Power of Pressure Sensitive Adhesive Tapes and BL-180 Type Test Instrument for 180° Peel .....	Xiao Libin [32]
Transform of Power-Expensive Motor by Magnet Putty (CC Material) .....	Wiang Kequan [34]
Bonding and Patch up Large-scale Oil Basin With Oil .....	Liu Ximing [37]
Bonding and Repair Crevice of Body of Tractor .....	Wang Kequan [38]
Repairing of the Defect in the Cast .....	Chen Feng [39]
Repairing of Leakage of PVC Plastic Pressure Line by Glass Fibre Reinforced Plastic .....	Song Renyi [40]
Contents List and Abstracts from the Journal of Adhesion Vol. 35 No. 1 (1991) .....	[41]

**Preparation and Application of Acrylic Ester Adhesive for Dry Lamination**

Dai Molan, Zou Mingguo, Wang Shikun, Zhou Jiulin and Cao Zhenyu

(Research Institute of Fine Chemical, Chengdu university of Science and Technology)

**Abstract**

The relationship between the property of AD acrylic ester adhesive for dry lamination, the composition of monomer, the synthesis technology of acrylic copolymer and constituent of AD adhesive was investigated in this paper. The result obtained indicated that properties of AD adhesive come up to the standard of the normal polyurethane adhesive for dry lamination, some of the former are better than the latter, but the cost of AD adhesive was reduced by 20% ~ 30%

KEY WORDS Adhesive, Dry lamination, Acrylic copolymer.

**Study on the Latex Textile Adhesive**

Zhang Renlan and Fan Chunshan

**Abstract**

In this paper, the vulcanizing, age-inhibiting, increasing in adhesion system and the stabilizing system of the latex textile adhesive were studied, respectively. A new composition and manufacturing process was introduced as well.

KEY WORDS Adhesive, Latex, Textile.

**Application of PANa Resin Binder in Foundry Production**

Ji GangChang, He Jiyun

(Northwest Institute of Light Industry) (Xi An Jiao Tong University)

**Abstract**

In this paper, the parameters of PANa resin suited for foundry use were researched. The comparison between this resin and some other gas hardening binders was made. It was shown by experiment results that PANa resin is a non-poisonous, gas-hardening resin binder which has great value in research and application.

KEY WORDS PANa Resin, Binder, Foundry.

**Study on the Mechanism of the Adhesion Co-ordinate Bond  
by X-ray Photoelectron Spectroscopy**

Zhai Haichao Weng Xixiang

(Armoured Corps Engineering Institute)

**Abstract**

In this paper, the chemical state of some elements on adhesive (epoxy) -adherend (steel or  $Al_2O_3$ ) interface was investigated by X-ray photoelectron spectroscopy. The results show that the displacement, thus the adhesion co-ordinate bond, existing on the interface was proved.

KEY WORDS X-ray photoelectron spectroscopy, Bonding mechanism, Co-ordinate bond.