

CORROSION SCIENCE

The Journal on Environmental Degradation of Materials and its Control Editor-in-Chief: G. T. BURSTEIN, University of Cambridge, U.K.

An Official Journal of the Institute of Corrosion

CONTENTS

Special Issue Progress in Corrosion Research in Commemoration of Centenary of Birth of Professor Go Okamoto **Guest Editors**

K. Hashimoto and M. Seo

M. SEO

N. SATO

R. W. STAEHLE

T. SHIBATA

M. J. GRAHAM, S. MOISA, G. I. SPROULE,

X. Wu, D. Landheer, A. J. SpringThorpe,

P. BARRIOS, S. KLEBER and P. SCHMUKI K. Hashimoto, K. Asami, A. Kawashima,

H. HABAZAKI and E. AKIYAMA

H. S. Isaacs, Y. M. Looi and

J. H. W. DE WIT

K. Sugimoto

L. LEE, D. HE, A. G. CARCEA and

R. C. NEWMAN

Preface

3 Group Photo

4 Go Okamoto 1905-1994 among pioneers in modern corrosion science

Transient stability of passive films in aqueous solutions

20 Passivity breakdown and stress corrosion cracking of stainless steel

31 Oxidation of III-V semiconductors

The role of corrosion-resistant alloying elements in passivity 42

Behavior of laser welded steel in chloride solution studied using difference imaging

Simulation analysis of electrochemical nature of real passive films with artificial passivation films

Exploring the reactivity and nanoscale morphology of de-alloyed layers

Contents continued on outside back cover

http://www.elsevier.com/locate/corsci

Continued from front cover

R. Nishimura	81	Characterization and perspective of stress corrosion cracking of austenitic stainless steels (type 304 and type 316) in acid solutions
w.c. I.C.T.D.	92	using constant load method Erosion-corrosion of stainless steel under impingement by a fluid jet
K. Sasaki and G. T. Burstein		Metal release from various grades of stainless steel exposed to
G. Herting, I. Odnevall Wallinder	103	synthetic body fluids
and C. Leygraf	110	Systematic approaches toward minimum maintenance risk manage-
H. Kihira	112	ment methods for weathering steel infrastructures
H. Masuda	120	SKFM observation of SCC on SUS304 stainless steel
T: NAKAYAMA, F. YUSE and Y. TSUBOKAWA	130	Direct observation of corrosion fatigue cracks in aluminum alloy using ultra-bright synchrotron radiation
X. LIU, G. S. FRANKEL, B. ZOOFAN and S. I. ROKHLIN	139	In-situ observation of intergranular stress corrosion cracking in AA2024-T3 under constant load conditions
K. TACHIBANA, Y. MORINAGA and M. MAYUZUMI	149	Hot dip fine Zn and Zn-Al alloy double coating for corrosion resistance at coastal area
R. Oltra and V. Vignal	158	Recent advances in local probe techniques in corrosion research – Analysis of the role of stress on pitting sensitivity
N. Hara, Y. Kobayashi, D. Kagaya and N. Akao	166	Formation and breakdown of surface films on magnesium and its alloys in aqueous solutions
M. Seo and M. Hagioi	176	Changes in mass and stress during anodic oxidation and cathodic reduction of the Cu/Cu ₂ O multilayer film
F. Di Quarto, F. La Mantia and	186	Recent advances on physico-chemical characterization of passive
M. SANTAMARIA		films by EIS and differential admittance techniques
S. Fuлимото and H. Tsuchiya	195	Semiconductor properties and protective role of passive films of iron base alloys
H. TSUCHIYA, J. M. MACAK, A. GHICOV,	203	Characterization of electronic properties of TiO2 nanotube films
A. S. RÄDER, L. TAVEIRA and P. SCHMUKI		<u>*</u> 1944 - 1944
S. Fujita and D. Mizuno	211	Corrosion and corrosion test methods of zinc coated steel sheets on automobiles
KH. Na, SI. Pyun and HP. Kim	220	Analysis of electrochemical noise obtained from pure aluminium in neutral chloride and alkaline solutions
A. W. Hassel and A. J. Smith	231	Single particle impact experiments for studying particle induced flow corrosion
S. TAKASAKI and Y. YAMADA	240	Effects of temperature and aggressive anions on corrosion of carbon steel in potable water
E. Tada	248	Detection of corrosion fatigue cracking through current responses induced by cyclic stressing
M. Yamasaki, N. Hayashi, S. Izumi and Y. Kawamura	255	Corrosion behavior of rapidly solidified Mg-Zn-rare earth element alloys in NaCl solution
	I	Corrosion diary

Indexed/Abstracted in Current Contents, Engng Ind Monthly & Author Index, PASCAL/CNRS Database, Corrosion Abstracts, Metals Abstracts, Chemical Abstracts, INSPEC Database, BMT Abstracts, Petroleum Abstracts, Aqua Abstr, Cam Sci Abstr, Chem Eng Abstr, Chem Haz in Indus, Edi Metal Abstr, Environ Per Bibl, Materials Science Citation Index, Applied Science & Technology Index, Wilson Applied Science & Technology Abstracts, Current Technology Index (CTI). Also covered in the abstract and citation database SCOPUS. Full text available on ScienceDirect.

Available online at



www.sciencedirect.com



0010-038x/200701149-1-1-P