Symposia

**Symposium U: Metals, Alloy Transformations and Intermetallic Compounds**
Chairs: David Ríos Jara, CIMA V, Mexico
and Guillermo Solórzano, Pontifica Universidade Católica do Rio de Janeiro, Brazil

**Symposium V: Thin Films, Layered Structures**
Chairs: A Czyrska-Filemonowicz, University of Mining Metallurgy, Poland
and Peter Barna, The Hungarian Academy of Sciences, Hungary

**Symposium W: Small Particles, Clusters and Catalysts**
Chairs: Abhaya Datye, The University of New Mexico, USA
and Miguel Avalos Borja, UNAM, Mexico

**Symposium X: Electron Microscopy of Magnetic Materials**
Chairs: Kannan Krishnan, University of California, USA
and John N Chapman, University of Glasgow, UK

**Symposium Y: Interface, Interphase and Intergranular Boundaries**
Chairs: Ulrich Dahmen, University of California, USA
and Manfred Rühle, MPI, Metallforschung, Germany

**Symposium Z: Ceramics, Composites, Hard and Ultra-hard Materials**
Chairs: Barry Carter, University of Minnesota, USA
and Paulo Fichtner, Universidade Federale do Rio Grande do Sul, Brazil

**Symposium AA: Polymers and Radiation Sensitive Materials**
Chairs: Takashi Kobayashi, Kyoto University, Japan
and Takeshi Ogawa, UNAM, Mexico
Contents

Symposium U: Metals, Alloy Transformations and Intermetallic Compounds
Chairs: David Ríos Jara and Guillermo Solórzano

Oral Papers

3 TEM characterization of shape, size and melting behaviour of Pb inclusions in Al grain boundaries
   U Dahmen, H Gabrisch, E Johnson

5 Behaviours of liquid metal islands on Si and SiO₂
   T Ichinokawa, Y Sakai

7 HRTEM observation of the γ’ in α iron matrix
   G Hinojosa, J Oseguera, P Schabes-Retchkiman

9 High resolution electron microscope study of a critical hydrostatic pressure for a nucleation of ω-phase crystals in β-Ti alloys
   E Sukedai, H Nishizawa, H Hashimoto

11 High resolution electron microscopy investigation of GP zones in an Al–Zn–Mg alloy
   Z X Zhou, K Du, D X Li

13 Hidden pseudo 5-fold symmetry in HRTEM images: a microstructural study of Frank–Kasper related phases in steels
   D Carron, R Portier

15 On an atomic model of hardening in Al-1.7at.% Cu alloy
   S Belliot, M Karlík, B Jouffrey

17 Electron microscopy study of ternary precipitates in Ni₃₉.₆Mn₄₇.₅Ti₁₂.₉
   J-W Seo, D Schryvers, P Potapov

19 A precipitation sequence in an AlMgZn-alloy
   R Holmestad, R Høier, N Ryum

21 Composition analysis of precipitates formed within X₁ phase in a Cu–Al–Ni–Mn–Ti shape memory alloy
   H Y Peng, Y D Yu, D X Li

23 Electron microscopy in plastic behaviour of cast Cu–Ti–Cr alloy
   M López, R Benavente, V Vergara, M Ignat

25 Precipitation in austenitic stainless steel 353MA
   P Liu, C Olsson, L Nylöf, G Selin

27 Segregation to interfaces in metals and alloys
   D B Williams, V J Keast, M Watanabe, D T Carpenter

29 TEM studies of melt spun NiTiCu shape memory alloys
   J Dutkiewicz, J Morgiel, T Czeppe

31 Formation of intragranular Widmanstätten cementite in hypereutectoid Cu-containing steels
   T Chairuangsri, R D Brydson, D V Edmunds
Analytical electron microscopy study of interface diffusion-controlled precipitation in Cu-75% In
A Queiroz, P Jardim, I G Solórzano

The effect of reactive-element alloying additions on the microstructure and microchemistry of thermally-grown oxide scales on nickel-based alloys
K B Alexander, K Prüßner, B A Pint, P F Tortorelli

Determination of compositional changes at transformation interfaces with sub-nanometer spatial resolution by in situ hot-stage energy-filtering transmission electron microscopy
J M Howe, A A Csontos, M M Tsai

Analysis of interfaces and shear fields in lamellar TiAl/Ti3Al
H Heinrich, F Král, G Kostorz

Weak-beam analysis of defects in L12 long range ordered intermetallics
A Korner

Stacking fault formation in Zr3Al
R E Smallman, P Shang, I P Jones

Nitride precipitates in TiAl
J G Zheng, Z G Liu, H J Lee

Striation contrast in Al-rich TiAl containing short-range order
F Grégori, P Veyssiére

HREM of dislocations in transition-metal disilicides with C11b and its derivative structures
H Inui, M Moriwaki, K Ishikawa, M Yamaguchi

The impact of TEM and EELS on martensitic transformation and high energy ion implantation
R Gotthardt, L Bataillard, A Hessler

Influence of thermal treatment on the microstructure of fatigued martensitic stainless steels
M Avalos, I Alvarez Armas, A F Armas

Spinodal decomposition in Cu–Fe alloys
W J Botta F, C S Kiminami, Y Xu, A R Yavari

TEM study and computer simulations of a chessboard-like microstructure development in the Co–Pt system
Y Le Bouar, A Loiseau, A G Khachatryan

Order-disorder transformation and deformation structure in β TiVCrAl alloys
Y G Li, P A Blenkinsop, M H Loretto, N A Walker

Application of the TEM in situ deformation technique to high performance materials
N Clément, A Couret, A Coujou

Radiation-induced microstructural changes in alloy X-750
M G Burke, R Bajaj

Dislocation substructures in tungsten-alloy ballistic penetrators
C Kennedy, S Pappu, L E Murr
Cyclic hardening and microstructure of Zircaloy-4 between 573 and 873 K
M G Moscato, I Alvarez-Armas, A F Armas

Defects in Nb–Cr–Ti C15 Laves phase alloys
P G Kotula, C B Carter, K C Chen, D J Thoma, F Chu, T E Mitchell

A study of deformation mechanisms in a crept γ-based TiAl-alloy
D Lundström, E M Knutson-Wedel, B Karlsson

Orientation relationships between σ-phase and matrix in a highly alloyed austenitic stainless steel
S Heino, E M Knutson-Wedel, B Karlsson

Poster Papers

Structure of a new phase formed during crystallization of titanium-aluminide amorphous film
E Abe, M Ohnuma, M Nakamura

A comparative study of the characteristics metallurgical of the dental amalgams
H A Acciari, E N Codaro, A C Guastaldi

On the growth mechanisms of graphite spherulite in the Ni–C alloy and the nodular cast iron
J P Ahn, J K Park, K H Kim, S C Kim

An electron probe microanalysis study of the breakaway oxidation of Fe-20Cr-5Al based alloys
H Al-Badairy, G J Tatlock

TEM characterization of the plastic strain field in front of cracks produced by stress corrosion
J L Albarran, C M del Castillo, R Perez, L Martinez

Characterization of corrosion products on spray-atomized FeAl intermetallic compounds tested in a molten salts mixture of V₂O₅ + Na₂SO₄
M Amaya, L Martinez

Microstructural and chemical characterizations of Al₃Ti obtained with rapid solidification techniques
C Angeles, G Rosas, R Perez

SEM investigations of PtAl diffusion coatings for high temperature oxidation protection of Ni base superalloys
J Angenete, K Stiller

Effect of plastic deformation on the kinetics of the solid state reaction between Cu and Zn
M Angiolini, G Mazzone, A Montone, M Vittori-Antisari

Examination of oxidation products in WC–Co hard metals
F Arenas, N Ribas, J Brito, A Albornoz, S-A Cho

Variant morphology at martensite formation in shape memory CuAlNi alloys
Y Aydogdu, A Aydogdu, Y Atici, O Adiguzel

HRTEM observation of defects in Al-1.7at.% Cu alloy
S Belliot, A Hundt, B Jouffrey
101 SEM and EDS study of the BUL and BUE formation in the turning processes of aluminium–copper alloys
M Bethencourt, F J Botana, J J Calvino, M S Carrilero, M Marcos

103 A SEM and EDS insight into the corrosion process of AA 5083 Al–Mg alloy in NaCl solutions
M Bethencourt, F J Botana, J J Calvino, M Marcos, J Pérez, M A Rodríguez Chacón

105 Oxidation of the Laves phase Zr(Cr0.4Fe0.6)2 in open furnace
P B Bozzano, M Ipohorski, R A Versaci

107 Elemental mapping in the characterization of Au/Sn intermetallics in solder joints
C B Bunis

109 Electron microscopy of Al3Ti-base alloys prepared by mechanical alloying
A Cabrera, M Umemoto, K Tsuchiya, J G Cabañas-Moreno, H A Calderón

111 Microstructural characterization and mechanical evaluation of a new 13Cr martensitic stainless steel pipe used in the oil industry
S Camero, B Fajardo, M Deligeorges, C Sequera

113 Microstructural characterization of CuNiAl alloys
N Castillo, P Santiago, L Rendón, A García, R Pérez, B Campillo, J Juárez

115 SEM analysis of niobium carbides in ductile irons
J Cerriteño, B Hernández

117 Microstructural characterization of Ti-added ultra-low carbon interstitial-free steel submitted by drawing test
J F Chagas, T M Hashimoto, W A Monteiro

119 Characterization of the fatigue fracture in dual-phase steel
J F Chagas, T M Hashimoto, W A Monteiro

121 Abnormal ferrite in hypereutectoid Cu-containing steels
T Chairuangsrri, D V Edmonds

123 Microstructural characterization of Inconel 718 submitted to two different post-weld heat treatments
J L Cherigate, M S Sader, G D A Soares

125 Defects in 18R martensite studied by TEM
A M Condó, F C Lovey

127 Current induced thermal expansion of aluminium film growth on silicon
J E Corona, O Ceh, P Quintana, A I Oliva, M Aguilar

129 Evolution of γ′ precipitates in Ni-12at.% alloy with bimodal particle size distribution by TEM
J J Cruz, H A Calderon

131 The influence of heat treatment on microstructure and electrochemical behaviour of 55% Al–Zn coating in acid environments
M A S Cruz, T M C Nogueira, P R Rios

133 TEM studies on the domain structures and phase transitions of boracites
M Czank, A G Castellanos-Guzman
Determination of eutectic growth mode in hypoeutectic Al–Si foundry alloys by EBSP investigations in SEM
A K Dahle, J Hjelen, L Arnberg

Microstructural characterization of Nb–Ta–Al alloys for use in electrolytic capacitors
J N F de Holanda

Characterization of a retain phase in the Zn–Al–Cu alloy
A de Ita, A Aragón, E Garfias

Investigations of the distribution of trace impurities in iridium by means of secondary ion mass spectrometry (SIMS)
B Fischer, A Behrends, D Lupton, J Merker

Electron microscope studies of the solid-state vortex microstructures associated with the friction stir welding of copper to aluminum
R D Flores, L E Murr, E A Trillo

TEM characterization of FeAl ordered intermetallic compound fabricated by spray-atomization and deposition
O Flores, F Perez, E J Lavernia, L Martinez

Microscopy of bainite in silicon alloyed high carbon steels
G Fourlaris, G D Papadimitriou

Structure change of Fe–Al powders by cold-milling
M Fujii, K Saito, K Wakayama, M Kawasaki, T Yoshioka, T Isshiki, K Nishio, M Shiojiri

Effect of Si on the microstructure and stability of different phases in a NiAl–Hf single-crystal alloy
A Garg, R D Noebe, I E Locci, R Darolia

Characterization of stress induced martensitic transformation on Cu–Zn–Al shape memory alloys by means of ESEM coupled with a servohydraulic testing machine
F J Gil, J M Manero, J Peña, M Marsal, J A Planell

Structure–property relationship study of a low alloy carbon steel
H Gordon, S Camero, P Frias, G Gonzalez

Surface film formation on Fe in alkaline electrolytes
F Graham

The coherent growing of the $\gamma$-phase in Ti$_4$Al$_3$Nb alloy
M Guymont, F A Sadi, C Servant

Energy filtered electron diffraction and atom probe investigation of artificial ageing in an Al–Zn–Mg alloy
V Hansen, L K Berg, M Knutson-Wedel, K Stiller, G Waterloo, J Gjønnes

Dislocation structure of Zircaloy-4 fatigued at room temperature
S Hereñú, I Alvarez-Armas, A Armas

The effect of overaging on the grain refinement of a 7475 commercial ALCANVEN aluminium alloy
B Hidalgo-Prada, S Y Paredes

The effect of the addition of boron on the microstructure of Al–Ir–Ru alloys with the B2 phase
P J Hill, L A Cornish, M J Witcomb
169 Oriented $\alpha''$-bct crystal precipitation in $\alpha$
G Hinojosa, J Oseguera, P Schabes-Retchkiman

171 Dislocation generation during nitriding process
G Hinojosa, O Salas, J Oseguera, P S Schabes-Retchkiman

173 The microstructure of austempered ductile iron
A Honarbakhsh-Raouf, D V Edmonds

175 Phase stability and deformation of single crystals of TiAl with Al-rich compositions
H Inui, K Chikugo, K Kishida, M Yamaguchi

177 Detailed microstructure of a stabilised austenitic stainless steel after high temperature heat treatment
J Källqvist, H-O Andrén

179 Microscopical investigation of sintered tungsten heavy alloy
F A Khalid

181 On the microstructure of multiple coated hardmetal insert
F A Khalid

183 Effect of deformation on the oxidation of Inconel superalloy
F A Khalid, S E Benjamin

185 Fracture behaviour of stainless steel wire reinforced metal-matrix composite
F A Khalid, S E Benjamin, D V Edmonds

187 Pyroelectric potential peculiarities in lithium niobate ferroelectric crystals studied by the SEM
L S Kokhanchik, E B Yakimov

189 Correlation between surface relief and internal structure of fatigued 316L stainless steel
T Kruml

191 Corrosion properties affected by metallurgical transformations occurring at low temperatures in high chromium duplex stainless steels
S E Kuri, J E May

193 Defect structure of austenitic stainless steel studied by electron microscopy
J L Lábáš, G Radnócz, J Dobránszky

195 A study of corrosion products on mild steel in industrial and marine environments from Cuba
P Leiva, M Ronda, J Gómez, J A Alonso, M Laza

197 Inhomogeneity of stacking faults in martensite plates of Cu–Zn–Al alloys studies by HREM
J Lelatko, H Morawiec, M Gigla

199 Voltammetric study of 55% Al–Zn coating in chloride solution
W C Lima, T M C Nogueira, C V D Alkaine

201 Long term oxidation of Ti–48Al–2Cr–2Nb
I E Locci, M P Brady, R A MacKay, J W Smith

203 TEM investigation of orthodontic stainless steel wires
Y Ma, A A Kaya, D J H Cockayne, M A Darendeliler, B Cheary, M Swain

205 Phase transformations in mechanically alloyed Co–Ti powders upon heating
R Martínez-Sánchez, J G Cabañas-Moreno, O Coreño-Alonso, A Duarte-Moller
207 Fatigue crack nucleation study in cyclically deformed Ti–6Al–4V alloy by means of TEM  
J M Manero, F J Gil, J A Planell

209 A study of aging behaviour of as-quenched ω-phase crystals in β Ti–Mo alloy using in situ dark field and high resolution electron microscopy  
H Matsumoto, E Sukedai, H Hashimoto

211 Carbon in retained austenite  
E S K Menon, A G Fox, G Spanos

213 Comparison of SEM and TEM observations of cyclically deformed Ta  
B Mingler, C Stickler, H P Karnthaler

215 The microstructure of a Ni–Cr–Fe alloy after welding processes  
W A Monteiro, W A P Calvo, S J Buso

217 The influence of the deformation processes on the microstructure of the annealed 6063 aluminium alloy  
W A Monteiro, P R Cetlin, M T P Aguilar, E Carballo

219 Effects of specimen surface on the formation of Si precipitates of Al-1.2%Si alloy  
K Nakagawa, T Kanadani, H Hashimoto

221 A study of nickel diffusion coating on plain carbon steel substrates  
B Ogel, M Yanar

223 Microstructural comparisons of copper and tantalum shaped charge and explosively formed penetrator slugs using TEM  
S Pappu, L E Murr

225 A microstructural study of austempered ductile iron using TEM  
M J Pérez L, H Calderón B, E Valdés C, M M Cisneros G

227 Study of Ni–Cr–W intermetallic phases by SEM and EDS  
M A Prato, F Arenas, M Albornoz, M Staia, A Scagni

229 SEM test for the Si-distribution within the (Al)-matrix of the Al–Si composite in situ  
K Rabczak, W Wołczyński, J Wyrzykowski, A Rakowska, P Zięba

231 Formation of SISF in multiple slip oriented Ni₃Al  
C Rentenberger, H P Karnthaler, T Waitz, B Mingler

233 Characterization of fractured surfaces of coke by SEM  
M A Ribas, E Osório, A C F Vilela

235 Transmission electron microscopy in the microstructure study of electrical steel Fe–3%Si  

237 SEM morphological study of the grain boundaries of sensitized austenitic stainless steels 304 AISI  
M A Romero, E Garfias

239 A study of corrosion products on zinc and steel in urban and marine test sites from Cuba  
M Ronda, J Gómez, J A Alonso, M Balmayor, P Leiva, D Ruiz, A Cabezas, M del C Menéndez, J Davis
Phase transformations and isothermal phase diagram sections in AlCuFe alloys
G Rosas, R Perez

Looking for screw dislocations in cast iron eutectic graphite
A N Roviglione

Scanning electron microscopy studies of Fe–3%Si texture obtained by etch-pit method
H O Santos, W A Monteiro, V A Rodrigues, N B de Lima

Image processing of SEM and LOM micrographs applied to the characterization of Cr white iron coating of steel samples
F A R Serra, I G Solórzano

The use of SEM on the study of endodontics instruments
M Siragusa, N Prado

TEM investigation of heterogeneous nuclei for graphite spheroids in ductile cast iron
J K Solberg

A study of the structure of metals by the ‘quasi-relaxation’ method
P T Meza, V Yermishkin

A SEM study of creep and thermal fatigue failure in naptha cracking furnace tubes made of 800H alloy
E Tekin

Characterization of turbine blade materials for oil industry
H Tovar, G Navas, L Viloria

SEM microstructural analysis of laser alloying and cladding on Mn-steel
R V Zarragotía, G Muñiz Planas, C T Sánchez

Determination of the nature of the stacking faults of an ASTM F-75 alloy
D Vázquez O, E Valdés C, H Mancha M, M M Cisneros G

TEM characterization of Ti–Cu and Al–Cu intermetallic precipitates during mechanical processing of steel
B Vidales, G V Reyes

Measurement of the hydrogen distribution in a hydride blister on a Zr–2.5% Nb alloy by electron probe microanalysis
G Vigna

Microstructural aspects of the deformation behaviour of pressure die cast magnesium alloys
I Wagner, D Regener

Microstructural investigation of NiAl–Ti–Cu alloys as a function of alloy composition
A W Wilson, J M Howe

EDS measurements of Mn, Zn, Fe and O2 distribution within the ferrite single crystal for the control of microsegregation
J Wyrzykowski, M Faryna, J Kloch, R Cupryś, W Wołczyński

High temperature study of the mechanical properties of W single crystal
V Yermishkin, P Tamayo Meza
Convergent beam electron diffraction study of $\beta$-AlFeSi
J G Zheng, R Vincent, J W Steeds

TEM studies on the effect of long term creep deformation on the microstructure of P92 chromium steel
A Zielinska-Lipiec, P J Ennis, A Czyska-Filemonowicz

TEM study of intermetallic phases in 55Al–Zn coatings
J Zou, X Z Liao, X F Duan, Y Durandet, D J H Cockayne

Symposium V: Thin Films, Layered Structures
Chairs: A Czyska-Filemonowicz and Peter Barna

Oral Papers

High-resolution electron microscopy of interfaces in heteroepitaxial diamond films
D Wittorf, W Jäger, K Urban

LEEM studies of metals grown heteroepitaxially on sapphire
W Święch, R S Appleton, B Wiemeyer, C P Flynn

Microstructural investigation of a La$_{1.9}$Sr$_{0.1}$CuO$_4$ thin film grown by MBE under a large compressive strain
J W Seo, J Perret, J Fompeyrine, J-P Locquet, G Van Tendeloo

Local stresses and displacements in highly strained InGaAs coherent islands by quantitative HREM
S Kret, J Y Laval, A Dubon, C Delamarre

Solid phase reactions in thin films: in situ HREM and associated techniques
R Sinclair

XTEM analysis of the sequentially formed amorphous and intermetallic phases in HTSD prepared Al–Pt thin film system
Zs Radi, P B Barna, J L Lábár

Layered structures accommodating stoichiometry in M$_2$X$_2$O$_7$ systems, as seen by diffraction and HREM
G Nihoul, Ch Leroux, Cl Cesari, G Van Tendeloo

Stability of fcc Ti in thin Ti/Al multilayers
R Banerjee, X D Zhang, S A Dregia, H L Fraser

Evolution with temperature of Au/Ni MBE multilayers
C Dressler, P Bayle-Guillemaud, J Thibault

Magnetic multilayers in a series of BaO:TiO$_2$:Fe$_2$O$_3$ compounds
L A Bendersky, J E Bonevich

Microstructural and chemical analysis of laser ablated Ba$_{0.5}$Sr$_{0.5}$TiO$_3$ films studied by high-resolution TEM and EDS
G A Hirata, S Horiiuchi, J Mckittrick, M Avalos, M Cantoni, D Madrigal, J Portelles, X Huang, Y Peng

HRTEM and nanoprobe study of nanocomposite Fe–Pt films
Y Liu, J P Liu, D J Sellmyer
307 Thin films for information storage: engineering material properties; the role of the electron microscope
E E Marinero, Y Kubota

Poster Papers

309 A new method for measurement of lattice distortions
G Ade, R Lauer

311 HRTEM of (Nd,Ce)$_2$CuO$_{4-y}$ thin films grown by post-annealing of metallic films
T Asaka, Y Adachi, K Takahashi, S Tsutsumi, Y Matsui

313 Investigations on interface quality in multilayer films by electron scattering
W Brunner, H Hoffmann, J Zweck

315 Characterization of silver electrodeposits using scanning electron microscopy (SEM)
I A Carlos, E M J A Pallone, P C Tulio, S I C de Torresi

317 Common features of the microstructure in the multilayers
Á Cziráki, I Bakonyi

319 Influence of the buffer layer on the mode growth of YBCO superconducting thin films studied by atomic force microscopy
R Desfeux, A Da Costa, C Mathieu, J F Hamet, T D Doan, N Cheene

321 Photoemission micro-imaging and spectroscopy of devices made from complex materials
G H Fecher, M Huth, Y Hwu, W Święch

323 Oxidation of magnesium fine particles studied by in situ high-resolution transmission electron microscopy
T Isshiki, K Nishio, M Shiojiri

325 TEM studies of the factors influencing unusual internal lattice bending of crystals growing in thin amorphous films
V Yu Kolosov, L M Veretennikov, N V Volhina

327 TEM study of silicide island formation during solid-state reactions of amorphous metallic thin films with Si substrates
V O Lifshits, N V Rozhanskiii

329 Morphological study of tungsten oxide films with addition of phosphorus and tin
A Medina, A Gutarra, H Alarcón, W Estrada, M Miki

331 Cross-sectional observations of Au/Fe multilayered films
Y Nakata, Y Hirotsu, H Nakajima, K Takanashi, S Mitani, H Fujimori

333 A new semi-in-lens cold-field-emission scanning microscope as a tool for nanofabrication
T Nokuo, M Shinoda, H Kazumori, M Saito, C Nielsen

335 Investigation of oxidizing of single crystalline Ti films under annealing with simultaneous laser irradiation
I S Nouprienok, A M Chaplanov

337 Epitaxial growth of thin tellurium films on NaCl(001) at reduced temperature
Ph Ott, J R Günter
Electron microscopy investigation of proton implantation in SiC material
A M Papon

Determining the JDOS of GaN using Kramers–Kronig analysis
A J Papworth, C J Kiely, G A J Amaratunga, U Bangert

SEM and TEM analysis of undoped and indium doped zinc oxide thin film obtained by spray pyrolysis
F Paraguay, W Estrada, D R Acosta, M Miki-Yoshida

Microstructural changes of zinc oxide thin films by Al, In, Cu, Fe and Sn dopants
F Paraguay, J Morales, W Estrada, M Miki-Yoshida

TEM study of diffusion processes in thin films of metallic glasses on Si substrates
N V Rozhanskii, V O Lifshits

Thickness determination of thin films using BSE spectra
F Schlichting, D Berger, H Niedrig

On the microstructure of LaTiO$_{3+x}$ thin films grown by MBE
J W Seo, J Fompeyrine, J P Locquet

Transmission electron microscopy study of thin film CuInSe$_2$ photovoltaic materials
M J Witcomb, V Alberts

In situ TEM study of fractal formation in Au/a-Ge bilayer films
Z Q Wu, X P Wang, S Y Zhang, N Y Jin-Phillipp, F Phillipp

Depth profiling by etching and imaging: 10 nanometre serial sectioning
N Yao, C Harrison, M Park, D H Adamson, P M Chaikin, R A Register

Interface structures of the epitaxial La manganite thin films on MgO, LaAlO$_3$ and SrTiO$_3$
K Yu-Zhang, K Han, Y Leprince-Wang, S Pignard, H Vincent, J P Senateur

FCC to BCC transition in Fe/Pt multilayers
K Yu-Zhang, K Han, H Kung, J D Embury, Y C Lu, M A Nastasi, B J Daniels, T C Hufnagel, B M Clemens

TEM observation of nucleation site of diamond particles heteroepitaxially grown on Pt(111) substrate
G Zhou, Y Takai, R Shimizu

Symposium W: Small Particles, Clusters and Catalysts
Chairs: Abhaya Datye and Miguel Avalos Borja

Oral Papers

STEM-based techniques on nanoparticles
C Colliex, D Bouchet, N Brun, D Imhoff, C Mory, J Perez-Omil, O Stephan, K Suena, M Tencé, B Yoon

A new model catalyst studied by HREM and AFM: platinum nanoparticle arrays on silica fabricated by electron beam lithography
G Rupprechter, A S Eppler, G A Somorjai
371 Electron energy-loss spectroscopy (EELS) of nanocrystals of zirconia and sulphated zirconia strong solid acid
H Xu, X Song

373 Characterization of MO derived nanostructured titania powders
P P Ahonen, E I Kauppinen, U Tapper, P Nenonen, J C Joubert, J L Deschanvres, G Van Tendeloo

375 Nanocrystal self-assembled superlattices—a new state of materials
Z L Wang

377 Analytical electron microscopy of zirconia pillars in montmorillonite
P A Crozier, M Pan, C Bateman, J J Alcaraz, J S Holmgren

379 Phase transformations in iron Fischer-Tropsch synthesis (FTS) catalysts
Y Jin, A K Datye

381 In situ observation of onion-like fullerene induced by Al nanoparticles under electron irradiation in a HRTEM
B Xu, S-I Tanaka

383 TEM and AFM study of model palladium catalysts obtained by plasma technique deposition on polycrystalline β-SiC surfaces
C Deranlot, F J Cadete Santos Aires, C Leclercq, A Berthet, J Massardier, J C Bertolini

385 Periodic arrangements of clusters on LTL zeolite surfaces
Y Horikawa, T Ohsuna, N Ohnishi, K Hiraga, O Terasaki

387 Metal catalyst particle imaging with field-emission TEM: electron holography and STEM
M M Disko, A Orchowski, C E Kliewer

389 Defect related growth of tabular AgCl(100) crystals: a TEM study
W Van Renterghem, D Schryvers, J Van Landuyt, C Van Roost

391 Microstructural characterization of bimetallic Ni–Pt catalysts supported on SiO₂
J Arenas-Alatorre, M Avalos-Borja, G Díaz-Guerrero

393 Alloy nanoparticle formation in Pt–Re reforming catalysts
C E Lyman, B Totdal, R Prestvik, A Holmen

395 Structural modifications observed in a VMgO catalyst under reaction conditions
C J Kiely, A Burrows, J Perregaard, P E Højlund-Nielsen, G Vorbeck

397 Nanoscale chemical inhomogeneity of sol–gel silica–alumina catalysts
C Sarbu, B Delmon

399 Low-voltage high-resolution secondary electron microscopy of industrial supported catalysts
J Liu

401 HREM characterization of high oxygen storage capacity cerium–zirconium oxide
C López-Cartes, R T Baker, S Bernal, G Blanchard, J J Calvino, J A Pérez-Omil

403 Characterization of iron nanoparticles by TEM obtained by different chemical techniques
M Bor, J Osuna, G González, C Urbina de Navarro
405 Crystallization of nanoscaled tungsten oxide powder particles
D V Szabó, D Vollath

407 The determination of specimen orientation and thickness on a nanometre scale from exit waves
R M J Bokel, J Jansen, H W Zandbergen, D van Dyck

Poster Papers

409 The crystalline structure of the InFeGe$_2$O$_7$ compound
A Arizmendi, L Bucio, P Santiago, E Orozco

411 Structure of nanocrystalline Ni–Mo–B alloys
A S Aronin, G E Abrosimova, Yu V Kir’janov

413 Characterization of solid acid catalysts for alkylation of hydrocarbons
D Berti, B Stocchi, L Montanari, A de Angelis

415 Imaging of minerals of the zeolite group by the environmental scanning microscope (ESEM)
W Bohyn

417 TEM of Co clusters embedded in amorphous alumina
J Briatico, J-L Maurice, F Petroff, P Seneor, A Vaurès, A Fert

419 The structure of highly dispersed phases: exploring the capabilities of HREM
J J Calvino, C López-Cartes, J A Pérez-Omil, J M Rodríguez-Izquierdo

421 Structural characterization of thiol-passivated gold nanoparticles
D Z Cruz, H Tolentino, M C Martins Alves, O Alves, D Ugarte

423 Transmission electron microscopy estimation of active site numbers present in alumina supported hydrotreating catalysts
P Da Silva, T Cseri, P Beccat, L Normand, V Harlé, N Marchal, S Kasztelan

425 Size and shape distributions in gold colloidal particles
C Flores, A Vazquez, R Hernández-Reyes

427 Sulphur-promoted ZrO$_2$ as an acid catalyst. Electron microscopy study
M A Gómez, W L Vargas

429 Characterization of PdO–MoO$_3$ supported catalysts by HREM
A Gómez-Cortés, G Díaz

431 Investigation of small size-controlled gold particles for low temperature CO oxidation by electron microscopy
J-D Grunwaldt, O-S Becker, A Baiker

433 HRTEM and image processing applied to passivated gold nanoparticle systems
C Gutiérrez-Wing, S Tehuacanero, R Cruz-Colín

435 Investigation by transmission electron microscopy of metallic clusters (Co, Ni, Cu,...) prepared by solution chemistry
S Illy, O Tillement, Y Fort, F Massicot, J Ghanbaja, J M Dubois

437 Radioactive fallout: electron microscopy and EDXA as important tools for characterization of particles and colloids released after nuclear accidents
T Krekling, C Ronneau, B Salbu
439 Synthesis of ZSM-5 from ethanol, iso-propanol and tert-butanol containing systems
A J Landaez, F O Bravo, B Hidalgo-Prada

441 Crystal morphometry as a tool for the synthesis optimization of MFI zeolites
C Lariot, R Villegas, C de las Pozas, E González

443 High resolution electron microscopy study of MOCVD platinum particles supported on alumina catalysts
Z K López, J R Vargas, M A Valenzuela, D R Acosta

445 Rare-earth reduced oxides with fluorite structure. Their systematic investigation using HREM and image simulation
C López-Cartes, L Eyring, Z C Kang, J A Pérez-Omil, J J Calvino

447 Reactive oxygen sites at the V₂O₅(001) surface: an ambient AFM study
C Mathieu, S Peralta, F Monchy, A Da Costa, R Desfeux, Y Barbaux

449 High resolution electron microscopy characterization of transition metal nitrides used in catalysis
J A Melo-Banda, D R Acosta, J M Domínguez, G Sandoval

451 Alkali halide surface decoration
P Mexia, J Reyes-Gasga, R Hernández-Reyes

453 Aragonite phase in recent sediments from ‘Mljet’s Lakes’ (Adriatic Sea, Croatia)
O Milat, J Sondi, M Juračić

455 Improved EELS data processing for an elemental quantification of small bimetallic clusters
C Mory, O Stéphan, M Tencé, C Colliex

457 Morphology characterization of palladium-containing catalysts obtained by a colloidal preparation method
Th Pages, E Merlen, L Normand, D Uzio, B Didillon

459 Simulation of gold nanoparticle hexagonal and FCC arrangements
M Pérez-Alvarez, J A Ascensio, C Gutiérrez-Wing, M José-Yacamán

461 The structural transformation of (VO)₂P₂O₇ to VPO₄
S Sajip, G MacPherson, C J Kiely, G J Hutchings, M Abon, J C Volta

463 TEM study of zeolite formed in porous Al₂O₃
Y Sasaki, W Shimizu, T Suzuki, Y Kubo

465 Preliminary findings on ambient air particles collected on nucleopore filters using energy filtering electron microscopy and scanning microscopy
R Stearns, V Hatch, J J Godleski, P Koutrakis

467 3D-reconstruction of an SiO₂-support for heterogeneous propylene-polymerization catalysts obtained by electron micrographs of serial microtome sections
B Steinmetz, G Fink, B Tesche

469 Nanoparticles produced by sputtering
S Takaki, S Yatsuya

471 HREM simulation of multi-phase crystalline nanoparticles
S Tehuacanero, J Arenas-Alatorre, P S Schabes-Retchkiman
TEM study of surface sulphidation of molybdenum oxides
V S Teodorescu, C Geantet, C Glasson, F J Cadete Santos Aires, C Leclercq

Electron microscopic investigations on titanium activated by chlorosilanes
B Tesche, A Fürnster

HREM study of bimetallic Ni–Mo catalysts deposited on alumina
E Tracz, D J Smith, T Borowiecki

Determination of the lattice spacing in small metal particles in commercial catalysts
S-C Y Tsen, P A Crozier, J Liu

Retarding effect of chromium on the kinetics of crystallization of Cr-silicates as investigated by XRD, SEM and TEM
C Urbina de Navarro, S Martínez, M R Goldwasser, M L Cubeiro

Influence of oxide reducing cycles in the morphology and crystalline structure of Pt–Au/SiO₂ bimetallic particles
A Vázquez, F Pedraza, E Garcíafigueroa, S Fuentes

Alloying reaction between nanometre-sized gold and antimony clusters
H Yasuda, H Mori

Reorientation of supported clusters: the Gleiter experiment on a nano-scale
M Yeadon, J C Yang, R S Averback, J W Bullard, J M Gibson

Electron irradiation damage structures in fine aluminum–lithium alloy particles
I Yoshizawa, K Watanabe, T Ono, K Kondo

Transfer systems for insertion of specimens into electron microscopes under controlled atmospheres
H W Zandbergen, P J Kooyman, A D van Langeveld

Contrast simulation of HREM nanoparticle images
C Zorrilla, G Mondragón, J Reyes-Gasga, M José Yacamán

Symposium X: Electron Microscopy of Magnetic Materials

Chairs: Kannan Krishnan and John N Chapman

Oral Papers

Electron holography of nano-scale magnetic particles and cross-sectional tunnel junctions
M R McCartney, R E Dunin-Borkowski

TEM in a controlled field to study magnetization processes in magnetic films and multilayers
J N Chapman, P R Aitchison, J P King, J Rose

Lorentz microscopic investigations on micromagnetic structures of multilayered thin films
J Zweck, Ch Bier

Lorentz transmission electron microscopy in a standard CM200FEG
K Verbist, E C Nelson, T C Anthony, J A Brug, K M Krishnan

Quantitative electron microscopy of magnetic thin films
K M Krishnan
507 3D micromagnetic simulation of domain structures observed by Lorentz electron microscopy
T Schrefl, J Fidler, J N Chapman, K J Kirk, P Thompson

509 Microstructure and magnetic anisotropy in epitaxial FePt(001) ordered alloy films
D J Smith, R F C Farrow, R F Marks, D Weller

511 Magnetically resolved and element specific imaging with photoelectrons using an immersion lens column
W Święch, R Frömter, C M Schneider, W Kuch, Ch Ziethen, O Schmidt, G H Fecher, G Schönhense, J Kirschner

513 Elemental segregation in Co–Cr–P–Pt magnetic thin films by imaging filter
J-H Choi, C Sung, L F Allard, K H Shin

515 Low-temperature electron diffraction study of charge-ordering in $\text{R}_{0.33}\text{Sr}_{0.67}\text{FeO}_3$ (R = La, Pr, Nd, Sm and Gd)
J Q Li, S K Park, Y Matsui, Y Tokura

517 HREM investigation of $\text{La}_{1-x}\text{Ca}_x\text{MnO}_{3-\delta}$ thin films
O I Lebedev, G Van Tendeloo, S Amelinckx, B Leibold, H-U Habermeier

519 High in-plane anisotropy SmCo sputtered thin films
M Benaissa, K M Krishnan, E E Fullerton

521 Studying the magnetic structure of Nd$_2$Fe$_{14}$B hard magnets using advanced electron microscopy
Y Zhu, M R McCartney, R L Sabatini

523 Comparative study of the magnetic fields from MFM tips
R P Ferrier, S McVitie

Poster Papers

525 MFM imaging of advanced magnetic recording media: evolution with the acquisition distance
A Asenjo, J M García, A M Baró, V Vázquez

527 SEM and EDS characterization of microstructural changes caused by Cr and Co addition in NdFeB magnetics
O B G Assis, M Mello, M Ferrante

529 Electron microscopy study of a new magnetically ordered fcc structure in nanocrystalline ball-milled Fe
C Ballesteros, L Del Bianco, J M Rojo, A Hernando

531 Theoretical coherent Foucault images of fluxon lattice
M Beleggia, G Pozzi, T Yoshida, J Endo, K Harada, H Kasai, T Matsuda, A Tonomura

533 Microstructural characteristics of rapidly quenched Nd$_2$Fe$_{14}$B/α-Fe exchange-spring magnets
M Benaissa, K M Krishnan, V Panchanathan

535 Magnetic flux lines in niobium superconductor observed by cryo-Lorentz TEM
M Cantoni, M Uchida, Y Matsui, T Tsuruta, S Horiuchi

537 TEM chemical and structural characterization of natural Mexican goethite
R Castañeda-Valderrama, K Rincón, J Reyes-Gasga
Microstructural and micromagnetic characterization of thin film magnetic tunnel junctions
R Dunin-Borkowski, M R McCartney, D J Smith, S Gider, B-U Runge, S S P Parkin

Electron microscopy study of SmCo$_{5-x}$Cu$_x$ magnetic material
E Estevez-Rams, A Valor, A Penton, J Fidler, J C Tellez, R Grossinger

Morphological–microanalytical study of a Na$_2$CO$_3$ containing natural clinoptilolite
E Garfias, A Rivera, G Rodríguez-Fuentes, M A Romero

Behaviour study by EDS of NaCl presence in SrFe$_{12}$O$_{19}$ synthesis
R Latorre, J Dufour, C Negro, J García, E M Alcalá, F López

Charge-ordering in LaSr$_2$Mn$_2$O$_7$ studied by HRTEM and low-temperature electron diffraction
J Q Li, Y Matsui, T Kimura, Y Tomioka, H Kuwahara, Y Tokura

Imaging nanostructures and magnetic domains with the JEOL 2010
Y Liu, Z S Shan, D J Sellmyer

Magnetic domain structure in NdFeB-based alloys studied by Lorentz microscopy
T D Nguyen, K M Krishnan

High-resolution electron microscope observation of Fe$_{16}$N$_2$ precipitates during tempering of iron–nitrogen martensite
H Tanaka, Y Hirotsu, S Nagakura

Electron microscopy for orientation determination in Nd–Fe–B permanent magnets
A Valor, E Estevez-Rams, F Caleyo

Domain wall movement in Fe$_{85}$B$_{15}$ investigated by stroboscopic SEM
I Varga, L Pogany, C Hargitai, I Bakonyi

Advanced transmission electron microscopy on Sm–Co based permanent magnets
J-M Yang, D Shindo, S-H Lim, M Takeguchi, T Oikawa

Domain observation in magneto-optical recording media using Lorentz microscopy
S Yatsuya

High resolution electron microscopy study on microstructure of magnetic multilayers related to the spin-dependent scattering
Z Zhang, Y H Gao, H P Sun

Symposium Y: Interface, Interphase and Intergranular Boundaries
Chairs: Ulrich Dahmen and Manfred Rühle

Oral Papers

Interface analysis by spatially resolved electron energy loss spectroscopy
J Mayer, J M Plitzko, S Köstmeier, C Elsässer

Application of high resolution x-ray mapping to grain boundary segregation
V J Keast, D B Williams
Interface EELS analysis: comparison of spatial difference and multivariate statistical analysis (MSA) techniques
M Saunders, E S K Menon, R Y Hashimoto, A G Fox

ELNES study of the chemical bonding at MgO–Cu interfaces elaborated under different oxygen activities
D Imhoff, C Collieix, S Laurent, M Backhaus

Atomic-scale structures in complex solids by Z-contrast STEM and first-principles theory
S J Pennycook, S T Pantelides, M F Chisholm, A Maiti, Y Yan

High-angle annular dark field imaging simulation and its Debye–Waller factor dependence
D Q Cai, G R Anstis, D J H Cockayne, X F Duan, S C Anderson

Multislice simulation of images and diffraction patterns of grain boundaries in FCC metals using the generalized coincidence-site network model
A Gómez, D Romeu, J L Aragón, L Beltrán del Río

Structure analysis of the $\Sigma = 3, 9$ and $27$ grain boundaries in $\beta$-SiC
K Tanaka, M Kohyama

Characterization of interfaces in nanostructured materials
H K Schmid

A method to determine the temperature dependence of the thickness of ferroelectric domain walls using weak beam transmission electron microscopy
M Foeth, P Stadelmann, P-A Buffat

Twinning shear transfer across lamellar interfaces in TiAl alloys
J M K Wiezorek, X D Zhang, D M Maher, H L Fraser

Structure of a gold non-periodic grain boundary by high resolution and diffraction
J M Pénisson, F Lançon, U Dahmen

In situ observation of liquid and solid–liquid interface of oxide ceramics
K Sasaki, H Saka

Microstructure of artificial $[100]$ $45^\circ$ twist grain boundaries in $\mathrm{YBa}_2\mathrm{Cu}_3\mathrm{O}_{7-\delta}$
K Verbist, F Tafuri, F Miletto Granozio, S Di Chiara, G Van Tendeloo

Poster Papers

Interface joint of AISI 316 and AlSi 12 by diffusion bonding
O R Bagnato, E S Cardoso, C A C Zavaglia

Silicon and lanthanum co-segregation to alumina grain boundaries in alumina-based composites
M E Brito, M Yatsuoka, S Kanzaki

Investigating the atomic scale superconducting properties of grain boundaries in high-$T_c$ superconductors
N D Browning, J P Buban, C Prouteau, D Verebelyi, D P Norton, D K Christen, S J Pennycook, P D Nellist

EBSD local texture studies in cold worked and fully recrystallized 50% Ni–Fe alloys
F Caleyo, F Cruz, T Baudin, R Penelle
603  Pt–Si reaction in the presence of interfacial native silicon oxide layers
   E Conforto, P E Schmid

605  Selective oxidation of austenitic stainless steel
   D C Cox, G R Millward, M Aindow, H E Evans

607  Auger analysis of surface diffusion and the link with surface roughening
   M E Dalton, G J Tatlock

609  Subgrain controlled melt topology in polycrystalline olivine–orthopyroxene
   aggregates
   R de Kloe, M R Drury

611  Study of interfaces in ZnO varistor materials using analytical electron
   microscopy
   M Elfving, E Olsson

613  Grain boundary studies of doped yttria-stabilized zirconia
   N D Evans, P H Imamura, J Bentley, M L Mecartney

615  TEM study of vanadium carbide precipitation in medium and high carbon
   vanadium alloyed steels
   G Fourlaris

617  Radiation-induced segregation and precipitation in a Nb-stabilized stainless
   steel
   A Garcia-Borquez, W Kesternich

619  One grain dark field imaging of grain boundary dislocation structures
   A Gemperle, J Gemperlová, T Vystavěl

621  Two basic types of near coincidence grain boundary dislocation structure
   A Gemperle, T Vystavěl, J Gemperlová

623  Mapping the chemical composition and bonding at interfaces in structural
   ceramics
   H Gu

625  ELNES analysis of diamond grain boundary atomic structure
   H Ichinose, M Nakanose, M Kohyama

627  CTEM and HRTEM microstructural study of artificially and naturally grown
   rutile
   P Jardim, I G Solórzano, J B Vander Sande

629  Determination of grain boundary structure of Al-doped sintered β-SiC by
   EELS
   K Kaneko, T Saitoh, S Tsurekawa

631  Interface and interphase analysis by the TEM FIB technique
   K Kuroda, M Takahashi, T Seguchi, A Shimatani, H Saka

633  HREM and IF quantitative analysis of CoSi2–CoSi/SiC interfaces
   M Lamy, J Thibault

635  In situ electron microscopy of Ge branch growth
   Y Lereah

637  Similar defects in bulk GaN and laterally overgrown GaN layers
   Z Liliental-Weber, J Washburn

639  Microstructural investigation on Fe–Zn/steel interface of galvanneal coatings
   S Matera, N Zacchetti
Reflected intensity from a buried interface
J Pacaud, O Birocheau, J Spence, J M Zuo

A joint theoretical and experimental investigation of bonding character at a grain boundary in the B2 compound NiAl
D A Pankhurst, G A Botton, C J Humphreys

In situ and weak beam transmission electron microscopy in the investigation of the grain boundary dislocation accommodation
S Poulat, B Decamps, L Priester

Identification of a low energy phase boundary in a low alloyed TRIP steel
W Prantl, I Papst, E A Werner

The effect of internal interfaces on CBED patterns
A Radefeld, F Schulze-Kraasch, H Lakner

Structure of small angle twin-boundaries in α-SiC by HRTEM
C Ragaru, M Lancin, J Thibault, J P Riviere

Study of the ferroelectric domain walls in PbTiO3 by HRTEM
A Sfera, P Stadelmann, P-A Buffat

Atomic scale structure–property relationships of interfaces in electronic ceramics
S Stemmer, G Duscher, E M James, M Ceh, N D Browning

XTREM study of Al doped TiO2 anatase epitaxial films deposited on MgO by pulse laser deposition
V S Teodorescu, M G Blanchin, C Champeaux, C Grapon

Potentialities of simultaneous HREM and conventional TEM of grain boundary structure
T Vystavel, J M Pennisson, A Gemperle, J Gemperlova

TEM analysis of close packed structures
T Waitz, H P Karnthaler, C Rentenberger, B Mingler

Measurement of grain boundary potential in undoped and Ho-doped BaTiO3
A Woonbumroong, C B Boothroyd

Intergranular boundary and reaction front in biopyribole minerals
H Xu, Y Wang

Understanding the structural origin of misorientation-independent superconductivity at twist boundaries in Bi2Sr2CaCu2O8 bicrystals
Y Zhu, L Wu, Q Li, Y N Tsay, M Suenaga

Symposium Z: Ceramics, Composites, Hard and Ultra-hard Materials
Chairs: Barry Carter and Paulo Fichtner

Oral Papers

Phase transitions in aluminium oxides
W Mader, B Zimmermann

Thermal transformation in high alumina clays
H Souza Santos, T W Campos, P Souza Santos, P K Kiyohara
Microscopy and microanalysis of interfaces in ceramic composites
K M Knowles, S Turan, A Kumar

Ti(C,N)–Mo2C–Co CERMETs: core/rim interface studied by high resolution electron microscopy and electron diffraction
E Conforto, D Mari, T Viatte, W Benoit

Consequences of the presence of microorganisms in concrete
M Ribas Silva

Characterization of precipitates present in oxide layers (ZrO2) grown on the Zircaloy-4 alloy
P B Bozzano, M Ipohorski, R A Versaci

Microscopy of SrTiO3-based ceramic varistors and capacitors
M Shiojiri, T Ishihiki, K Nishio, H Sajo, T Nomura, A Hitomi, S Sato

Deformation of melt textured YBa2Cu3O7 superconductors
N Vilalta, L Richard, F Sandlumenge, J Rabier, M F Denanot, T Prikhna, W Gawalek, X Obradors

Electron microscopy characterization of thermochemically reduced YSZ crystals
B Savoini, C Ballesteros, J E Muñoz Santiuste, R González, Y Chen

Superstructures of BaNb5.67S10.8
G Y Yang, Y Bando, M Saeki, M Onoda

Electron microscopy of SiC, GaN and AlN
P Pirouz

TEM HREM characterization of structural defects in GaN epitaxial layers grown on sapphire
S Ruvimov, Z Liliental-Weber, J Washburn, H Amano, I Akasaki

HREM of defects in cubic boron nitride single crystals
L Nistor, J Van Landuyt, G Dinca

Identification of a new trace 114R SiC polytype by HREM
X Y Yang, G Y Shi, X M Meng, H L Huang, Y K Wu

Facilitated synthesis of ultra-hard c-BN from ball-milled h-BN
S Horiuchi, J Huang, T Taniguchi

Ultra-high resolution imaging of stacking fault interactions in the synthetic diamond structure
S Delclos, D Dorignac, F Phillipp, S Moulin, A Bonnot

Electron microscopy analysis of diamond films grown by the graphite hollow cathode discharge method
O Contreras, M Avalos-Borja, G A Hirata

HRTEM investigation of nanodiamond-coated C-fibres
A Alippi, D Manno, M Rossi, V Sessa, A Tepore, M L Terranova

The β-SiC(001)/Si(001) interface studied by molecular dynamics simulation, HREM imaging and HREM simulation
P O Å Persson, V Chirita, L R Wallenberg, L Hultman

TEM study of the precipitation state of a squeeze-cast AlCuMgAg/SiC composite
C Cayron, P A Buffat, O Beffort, S Long
Poster Papers

711 Microstructural study of SiC-platelet/silicon nitride ceramic composites
   W Acchar, U U Gomes, J C Bressiani, A H A Bressiani

713 Characterization of Al2TiO5 stabilized by FeTiO3
   I Arenas, S Martinez, F Arenas, S-A Cho

715 Carbon nitride films deposited by reactive laser ablation
   G Barucca, P Mengucci, G Leggieri, I N Milhailescu

717 Structural and chemical analysis of micro-sized particles found in aluminous
electrical porcelains
   S Bribiesca-Vázquez, J Reyes-Gasga, M E Contreras-García

719 On the structural analyses of bulk shock-induced g-BN to c-BN allotropic
   transformation
   E Carlino, M A Tagliente, M Gusso, A T Bukat

721 Anisotropic grain growth in CaTiO3 with Ca/Ti > 1
   M Čeh, A Rečnik

723 Synthesis and characterization of TiO2 thin layers of electrochemical interest
   G Cerrato, C Morterra, R Perego, C H Čen, J Schoonman

725 Microstructural development in ZrO2–Y2O3/Al2O3 composite system seeded
   with α-Al2O3

727 Correlation between the mechanical properties of the ZrO2–Y2O3/Al2O3
   system and the microstructural properties

729 Microstructural development in ZrO2-CaO system with the CaO content
   M E Contreras G, J Zárate M, J Reyes G

731 Microscopic characterization of Mexican dead burned magnesite
   L Cruz Matus

733 Poling process in ferroelectric ceramics
   J de Frutos, A M González, C Duro, M J Melcon, E Menéndez

735 The orientation of fibrils of pseudoboehmite in the formation of membranes
   P de Souza Santos, H Souza Santos, P K Kiyohara

737 Study of particle distribution in composite materials using x-ray computed
   tomography
   G Dominguez, M Gonzalez, C Bathias

739 TEM investigations of CaTiO3–NdAlO3 ceramics
   G Dražič, D Suvorov, M Valant

741 Synthesis of ZrO2–CaO powders for catalytic supports via spray-drying
   processing of aqueous salt solutions
   I Espitia, D Garibay, M E Contreras, M Sanchez, M A Carreón, J Reyes

743 Polyester resin reinforced with cellulose fibres
   R F Estrada, V Rodríguez-Lugo, J Arenas, G Mondragón

745 Interphase boundary in the TZP–WC composites
   M Faryna, K Haberko, J A Kozubowski, Z Pędzich

747 Temperature effect on the morphology of He bubble clusters in silicon
   P F P Fichtner, J R Kaschny, R A Yankov, A Mücklich, W Skorupa
Study of near surface zones in cemented carbides
R Frykholm, H-O Andrén

Electron-beam induced polar orientation flipping in the non-stoichiometric PMN-PT ferroelectric system
A Fundora, J Portelles, J M Siqueiros, M Avalos

Elemental mapping of B by SEM (WDS) in Al–Si/SiCp cast composites treated with small additions of Ti–B

Microstructural characterization of the interfacial region in Al–Si/SiCp cast composites with Sr

Structural study by transmission electron microscope of the (Cu,C)Ba$_2$Ca$_{n-1}$Cu$_n$O$_y$ superconductor family
E Gautier, C Chaillout, D Imhoff, C Colliex, S Le Floch

TEM observation of BaTiO$_3$ domain structures under an applied electric field
Y Goto, N Yamamoto, K Yagi

Spinel layers formed at the interface between ZnO and SnO$_2$
L L He, M Tsukioka, M Hirasaka, S Horiuchi

A TEM study of TEOS gelation
R Hernández-Reyes

Precipitation in the systems Fe–Fe$_3$O$_4$, MgO–Fe$_2$O$_3$ and ZrO$_2$–CaO–MgO
A Huerta, K Tsuchiya, M Umemoto, H A Calderon

TEM studies of the microstructure evolution in plasma treated CVD TiN thin films used as diffusion barriers
S Ikeda, J Palleau, N Bourhila, J Torres, B Chenevier, R Madar

More experience with cutting soft and hard materials with the same 45° knife of the third generation
D Kalicharan, R S B Liem, W L Jongebloed

Microstructures of Cr-doped alumina precursors prepared from metal alkoxides
P K Kiyohara, M L P Antunes, E Tanaka, P S Santos, H S Santos, Y Tomokiyo

High-temperature deformation and structure change of Al$_2$O$_3$ and Y-ZrO$_2$
A Kumao, N Nakamura, H Endoh, Y Okamoto, M Suzuki

Electron microscopy in the characterization of the $\alpha$-SiO$_x$N$_y$ thin films deposited by spray pyrolysis
A Lopez

Phase transitions in PbHf$_x$Ti$_{1-x}$O$_3$ perovskites and resulting domains
V Madigou, C Muller, J L Bandour, C Bedoya, M Roubin, G Nihoul

TEM study of the corrosion process of $\alpha$-alumina by potassium vapour during the creep of MgO–K$_2$O doped alumina
A Mamoun, T Epicier, M Aouine, M Murat

Interphases and precipitates in C fibres/Al alloy matrix composites
C Marhic, M Lancin
Electron microscopy on the investigation of petroleum microstructure reservoir rocks
L Martinez, M A Cisneros Guerrero, M Flores Prado

Structure study of La_{8-x}Sr_{x}Cu_{8}O_{20} (x = 1.6–2.2)
H Matsumata, H Yamaguchi, T Ito, K Oka

Microstructure of ultra-high-performance concretes: compact reinforced composite (CRC) and reactive powder concrete (RPC)
E Menéndez, M A Sanjuán, C Andrade

Crack tip in 6H-SiC
X M Meng, S C Lee, R K Y Li, J Y Dai, D X Li

First principles Car–Parrinello molecular dynamics simulations of bonding in amorphous carbon nitrides
A R Merchant, D G McCulloch, D R McKenzie

SEM analysis of LaCrO_{3} sintered by the addition of a eutectic composition of CaO–CoO
M R Morelli, B Derby, R J Brook

Structural transformation in Bi_{0.2}Ca_{0.8}MnO_{3} studied by electron microscopy with energy-filter
Y Murakami, D Shindo, K Hiraga, T Kaneyama, T Oikawa

The use of SEM and XRD to diagnose problems in rendering mortar of buildings
N Pagan Hasparyk Andrade, H Carasek, F Nogueira Veiga

Evolution of the fibre/matrix interface of ceramic matrix composites
J Pérez-Rigueiro, P Herrero, J L Lorca

Quality assessment of liquid phase sintered MgAl_{2}O_{4} for chemical resistance application using scanning electron microscopy—SEM
A C A Prado, E M J A Pallone, M R Morelli

Genetic sequence of zeolite formation in concretes with alkali–silica reaction
N Prendes, E Menéndez

Disintegration of inversion boundaries in Sb_{2}O_{3}-doped ZnO
A Rečnik, W Mader

SEM morphological aspects of Al_{2}O_{3} flakes synthesized from aluminium nitrate
C A Rodrigues, R H G A Kiminami, M R Morelli

Electron microscopy in cement mortars elaborated with volcanic sand from Morelia, Michoacan, Mexico
J C Rubio, E Alonso, M E Contreras, L Martínez-Gómes

Synthesis and characterization of α-Si_{3}N_{4} from rice husks
E Rubio R, V Rodríguez-Lugo, V M Castaño

Interfaces in Al_{18}B_{4}O_{33}/Al and Mg alloy composites
G Sasaki, L J Yao, M Yoshida, J Pan, H Fukunaga

HREM study of diamond particles sliced by FIB
H Sawada, H Ichinose, H Okushi, D Takeuchi
817 TEM observations of laser treated alumina
L Shepeleva, B Medres, W D Kaplan, M Bamberger, C M Sharp, M H McCay, T D McCay

819 Crystallographic and morphologic characterization by TEM of a clay from the north of Rio de Janeiro
L A H Terrones, A L A Rocha, J Alexandre

821 Study of the fractured region of ceramic tile
C M F Vieira, J N F de Holanda, D G Pinatti

823 New dislocation substructure in NdBa2Cu3O7
N Vilalta, F Sandiumenge, J Rabier, X Obradors

825 Transmission electron microscopy study of radiation effects in materials for nuclear waste disposal
L M Wang, R C Ewing

827 Decomposition of Ni binder phase in Ti(C,N) based cermets
J Zackrisson, L K L Falk, H-O Andrén

Symposium AA: Polymers and Radiation Sensitive Materials
Chairs: Takashi Kobayashi and Takeshi Ogawa

Oral Papers

831 Electron microscopy studies of the influence of the chemical composition on the morphology of PMMA–TEGDMA polymer blends
R Velázquez, F Sánchez, E Méndez, V Castaño

833 Changes in cotton fibre surfaces due to cellulase treatments
W R Goynes, P S Howley, N R Bertoniere, T M Von Hoven

835 Dependence of electron beam damage in organic crystals on accelerating voltage
T Ohno, M Sengoku, T Arii

837 Density distribution analysis of polyethylene with energy filtering TEM
K Masaki, O Tatsuki, H Naohiro

839 Transmission electron microscopy of soluble and electrically conducting polyaniline
J Liu, P J Kinlen

841 Room temperature observation of double strand DNA fibres
K Yada, G Takahashi

843 Cryoelectron microscopy study of α-D-glucans from starch
J-L Putaux, A Buléon, R Borsali, H Chanzy

845 Cryo-TEM on structure analysis of a metastable polymorph of a hydrated organic crystal. I. Copper oxinate dihydrate
S Terada, T Ogawa, T Nemoto, S Isoda, T Kobayashi

847 Characterization of polymer microstructure with x-ray microscopy
H Ade

849 The use of electron crystallography to obtain molecular physical parameters in radiation sensitive organic materials
I G Voigt-Martin
AFM characterization of self-assembled protein thin film on non-flat substrate
O B G Assis, R Bernades-Filho, L A Colnago

A STEM and AFM investigation of electron damaged aluminium trifluoride
I R Smith, A L Bleloch

Poster Papers

Morphological behaviour of virgin PP with recycled HDPE with the addition of a block copolymer
C Albano, E Freitas

Image analysis of millipore membranes
D A Bell

Morphology and properties of a polystyrene–polyethylene blend compatibilized through a block copolymer and an organic peroxide
R Braglia, L Locatelli, S Pirato

Influence of the synthesis conditions in PFu/ClO₄ film morphology
I Carrillo, M J González-Tejera, E Sánchez de la Blanca, I Hernández-Fuentes, C Barba

Scanning electron microscopy study and mechanical behaviour of polysaccharide based materials
D Dupeyre, A Dufresne, M García Ramírez, N Balhouli, A Caldara, J Y Cavaillé

Micromechanics of poly(sytrene–block–butadiene–block–methylmethacrylate) triblock copolymers with lamellar and polystyrene-matrix based morphologies
M Ensslen, G H Michler, R Stadler

Energy-filtered imaging of polyamide/poly(phenylene ether) blends
W Heckmann, W Probst, F Hofer, W Grogger

Measurements of polymer–polymer interfacial thickness by an electron spectroscopic imaging
S Horiuchi, T Hanada, K Yase, T Ougizawa

Porosity of polymeric denture-moulds cured by microwave
G Martínez-Barrera, A Barajas, V M Castaño

Electron microscopy and atomic force microscopy in the analysis of profile damage ions in plastic
D Mendoza-Anaya, L Tavera-Davila, M Perez-Díaz, M Balcazar-García, J G Bañuelos, J M Saniger-Blesa

Scanning electron microscopy studies on liquid functional elastomer modified epoxy resin
V Nigam, D K Setua, G N Mathur

Scanning electron microscopy studies on fracture surface topography of elastomer blends
K N Pandey, S K Pradhan, D K Setua, G N Mathur

Second phase electron diffraction pattern evidence in KBr:Eu²⁺

Electron microscopy study of amylose retrogradation
J-L Putaux, A Buléon, H Chanzy
Applications of atomic force microscopy on the study of nuclear track formation in solids
E Santos-Rodríguez, R Fragoso, C Vázques-López, J I Golzarri, G Espinosa

SEM investigation of the β-modification of poly(propylene)
T E Sukhanova, F Lednický

Scanning electron microscopy studies on morphological changes due to diffusion of toxic chemical through rubber
D N Tripathi, K N Pandey, D K Setua, G N Mathur

Industrial applications of medium to high resolution cryo scanning electron microscopy
A Wilson, M Bertucci, G Fuchs, D Lutz, S Marull, C Saury, C Scramončin

Microscopic analysis of on-top crystal nucleation in organic multilayer
K Yoshida, M Tsujimoto, S Isoda, S Moriguchi, T Kobayashi

Electron spectroscopic imaging and diffraction studies of phthalocyanines by means of EFTEM and cryo-techniques
F Zhou, S Steinbrecher, E Plies, M Hanack

Incorporation of electron microscopy in the evaluation of thermal performance of polyethylene and propylene pipes
E Zumelzu, M Fuentes, H González

Late Papers

◆ Symposium U: Scanning electron microscopy (SEM) and energy dispersive x-ray spectroscopy (EDS) for the characterization of corrosion scales and the study of the corrosion mechanism
J M Lameille, F Delaunay, C Berthier, M Lenglet

◆ Symposium AA: New micromechanical mechanisms in heterogeneous polymers—revealed by in situ electron microscopy (poster)
G H Michler