

# Bibliography on Applications of Scanning Probe Microscopy to Characterization of Polymers

Compiled by Oleg Boldenkov, MikroMasch  
Last updated in October 2002, titles sorted in  
alphabetical order

**805**

**A scanning force microscopy study of poly(phenol) films containing immobilized glucose oxidase**

P.N. Bartlett, D.W.M. Arrigan

Biosensors and Bioelectronics, 13 (1998), 3-4, 293-304

**1001**

**A scanning probe microscopy study of conjugated polymers**

S.F. Bond, A. Howie, R.H. Friend

Surface Science, 331-333 (1995), 196-200

**806**

**A study of the glass transition of polypropylene surfaces by sum-frequency vibrational spectroscopy and scanning force microscopy**

W. Ibach, Y.R. Shen, L. Lianos, D.H. Gracias, D. Zhang, G.A. Somorjai

Chemical Physics, 245 (1999), 1-3, 277-284

**196**

**A Surface Masking Technique for the Determination of Plasma Polymer Film Thickness by AFM**

Patrick G. Hartley, Helmut Thissen, Tharshan Vaithianathan, Hans J. Griesser

Plasmas and Polymers, 5 (2000), 1, 47-60

**304**

**A two-dimensional Hartman-Perdok analysis of polymorphic fat surfaces observed with atomic force microscopy**

F.F.A. Hollander, M. Plomp, J. van de Streek, W.J.P. van Enckevort

Surface Science, 471 (2001), 1-3, 101-113

**281**

**AFM and TEM investigations of polypropylene-polyurethane blends**

D. Reifer, H. Fuchs, R. Windeit, A. Karbach, R.J. Kumpf

Thin Solid Films, 264 (1995), 2, 148-152

**176**

**AFM and XPS study of ion bombarded poly(methyl methacrylate)**

B. Pignataro, M.E. Fragala, O. Puglisi

Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, 131 (1997), 1-4, 141-148

**269**

**AFM imaging and characterization of latex particles formed by copolymerization of styrene and poly(ethylene oxide) macromonomer**

S.F.Y. Li, C.H. Chew, P.-C. Zhang, J. Liu, L.M. Gan

Talanta, 45 (1998), 4, 767-773

**195**

**AFM investigation of polymer LB films on the alignment of ferroelectric liquid crystal**

J. Gu, R. Lu, K. Xu, Z. Lu

Physics Letters A, 260 (1999), 5, 417-423

**25**

**AFM investigations of the initial stages of prepolymer film growth on aluminium**  
 T. Gesang, R. Hoper, S. Dieckhoff, D. Fanter, A. Hartwig, W. Possart, O.-D. Hennemann  
*Applied Surface Science*, 84 (1995), 3, 273-283

**154**

**AFM measurement of the grain size in polycrystalline titanium silicides**  
 F. Cazzaniga, G. Pavia, A. Sabbadini, S. Spiga, G. Queirolo  
*Microelectronic Engineering*, 55 (2001), 1-4, 93-99

**265**

**AFM studies of composite 16-mer polyaniline Langmuir-Blodgett (LB) films**  
 A.G. MacDiarmid, A. Dhanabalan, M.A. Cotta, P.S.P. Herrmann, A.J. Riul, L.H.C. Mattoso, O.N.J. Oliveria  
*Synthetic Metals*, 101 (1999), 1-3, 830-831

**266**

**AFM studies of polypyrrole film surface morphology I. The influence of film thickness and dopant nature**  
 R.G. Compton, T. Silk, Q. Hong, J. Tamm  
*Synthetic Metals*, 93 (1998), 1, 59-64

**267**

**AFM studies of polypyrrole film surface morphology II. Roughness characterization by the fractal dimension analysis**  
 Q. Hong, R.G. Compton, J. Tamm, T. Silk  
*Synthetic Metals*, 93 (1998), 1, 65-71

**143**

**AFM study of excimer laser ablation of polythiophene films**  
 K. Tsunoda, T. Ishii, Y. Tezuka, H. Yajima  
*Journal of Photochemistry and Photobiology A: Chemistry*, 106 (1997), 1-3, 21-26

**197**

**AFM study of thermotropic structural transitions in poly(diethylsiloxane)**  
 S.N. Magonov, V. Elings, V.S. Papkov  
*Polymer*, 38 (1997), 2, 297-307

**169**

**AFM surface investigation of polyethylene modified by ion bombardment**  
 H. Ryssel, R. Ochsner, V. Hnatowicz, V. Svorck, V. Rybka, E. Arenholz  
*Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, 142 (1998), 3, 349-354

**175**

**AFM surface morphology investigation of ion beam modified polyimide**  
 V. Svorcik, V. Rybka, E. Arenholz, V. Hnatowicz  
*Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, 122 (1997), 4, 663-667

**316**

**An atomic force microscopy study of weathering of polyester/melamine paint surfaces**  
 S. Biggs, C.A. Lukey, G.M. Spinks, S.-T. Yau  
*Progress in Organic Coatings*, 42 (2001), 1-2, 49-58

**1005**

**An in situ scanning probe microscopy study of copper electrodeposition on conductive polypyrrole**  
 R.J. Nichols, D. Schroer, H. Meyer  
*Electrochimica Acta*, 40 (1995), 10, 1479-1485

**140****Analysis of Anionic Polymer Dispersant Behavior in Dense Silicon Nitride and Carbide Suspensions Using an AFM**

M. Nojiri, S. Matsui, H. Hasegawa, T. Ono, Y. Fukuda, M. Tsukada, H. Kamiya

Journal of Nanoparticle Research, 3 (2001), 2/3, 237-244

**811****Ar plasma treated and Al metallised polycarbonate: a XPS, mass spectroscopy and SFM study**

H. Fuchs, C. Seidel, B. Gotsmann, H. Kopf, T. Vieth, K. Reihs

Applied Surface Science, 150 (1999), 1-4, 19-33

**334****Atomic force microscopy and Fourier transform infra-red studies of the influence of a highly oriented poly(tetrafluoroethylene) substrate on poly(ethylene terephthalate) overlayers**

N.W. Hayes, G. Beamson, D.T. Clark, D.S.-L. Law, D.T. Clarke

Polymer, 37 (1996), 3, 523-526

**358****Atomic force microscopy imaging of single polymer spherulites during crystallization: application to a semi-crystalline blend**

B. Nysten, A.M. Jonas, D.A. Ivanov

Polymer, 40 (1999), 21, 5899-5905

**363****Atomic force microscopy investigation of filled elastomers and comparison with transmission electron microscopy - application to silica-filled silicone elastomers**

F. Clement, A. Lapra, L. Bokobza, L. Monnerie, P. Menez

Polymer, 42 (2001), 14, 6259-6270

**366****Atomic force microscopy investigations of morphologies in ultrathin polyaniline films**

T. Kugler, J.R. Rasmussen, W.R. Salaneck, J.-E. Osterholm, A.P. Monkman

Synthetic Metals, 76 (1996), 1-3, 181-185

**383****Atomic force microscopy of structures produced by electrospraying polymer solutions**

N.R. Kallenbach, T.Y. Morozova, V.N. Morozov

International Journal of Mass Spectrometry, 178 (1998), 3, 143-159

**388****Atomic force microscopy on ethyl-cyanoethyl cellulose/polyacrylic acid composites with cholesteric order**

Y.Q. Yang, J. Petermann, Y. Huang

Polymer, 39 (1998), 22, 5301-5306

**392****Atomic force microscopy studies of molded thin films of segmented polyamides**

Subiman Ghosh, D. Khastagir, A. K. Bhowmick, S. Bandyopadhyay, G. J. P. Kao, L. Kok

Journal of Materials Science Letters, 19 (2000), 23, 2161-2165

**393****Atomic force microscopy studies of short melamine fiber reinforced EPDM rubber**

R. S. Rajeev, S. K. De, A. K. Bhowmick, G. J. P. Kao, S. Bandyopadhyay

Journal of Materials Science (full set), 36 (2001), 11, 2621-2632

**407****Atomic force microscopy study of polypropylene surfaces treated by UV and ozone exposure: modification of morphology and adhesion force**

B. Berno, N.S. McIntyre, M.J. Walzak, H.-Y. Nie

Applied Surface Science, 144-145 (**1999**), 627-632**412****Atomic force microscopy study of the morphology of polythiophene films grafted onto the surface of a Pt microelectrode array**

Y. Cohen, E. Vieil, D. Aurbach, M.D. Levi, M. Lapkowski, J. Serose

Synthetic Metals, 109 (**2000**), 1-3, 55-65**413****Atomic force microscopy study of the topographic evolution of polyacrylonitrile thin films submitted to a rapid thermal treatment**

F. Houze, P. Newton, S. Guessab, S. Noel, L. Boyer, G. Lecayon, P. Viel

Thin Solid Films, 303 (**1997**), 1-2, 200-206**418****Atomic force microscopy surface morphology studies of 'in situ' deposited polyaniline thin films**

J.K. Avlyanov, A.G. MacDiarmid, J.Y. Josefowicz

Synthetic Metals, 73 (**1995**), 3, 205-208**424****Atomic force microscopy, a powerful tool to study blend morphologies based on polyester resins**

C. Serre, M. Vayer, R. Erre, N. Boyard, C. Ollive

Journal of Materials Science (full set), 36 (**2000**), 1, 113-122**1357****Bundle structure formation on a polymer film at various temperatures and scanning velocities**

X. P. Wang, M. M. T. Loy and X. Xiao

Nanotechnology 13 (**2002**) 478-483**1400****Characterisation of the topography and surface potential of electrodeposited conducting polymer films using atomic force and electric force microscopies**

J.N. Barisci, R. Stella, G.M. Spinks, G.G. Wallace

Electrochimica Acta, 46 (**2000**), 4, 519 - 531**443****Characterization of glass-epoxy adhesion using JKR methods and atomic force microscopy**

G. Jandeau, D.L. Woerdeman, V. Ponsinet, N. Amouroux, L. Leger, H. Hervet

Composites Part A: Applied Science and Manufacturing, 30 (**1999**), 1, 95-109**446****Characterization of latex blend films by atomic force microscopy**

A.A. Patel, F. Jianrong, M.A. Winnik, G.J. Vansco, C.B.D. McBain

Polymer, 37 (**1996**), 25, 5577-5582**447****Characterization of polyacrylonitrile films grafted onto nickel by ellipsometry, atomic force microscopy and X-ray reflectivity**

A.M. Jonas, M. Mertens, R. Jerome, X. Arys, C. Calberg, R. Legras

Thin Solid Films, 310 (**1997**), 1-2, 148-155

**822**

**Characterization of polymeric membranes by means of scanning force microscopy (SFM) in comparison to results of scanning electron microscopy (SEM)**

H. Kamusewitz, M. Schossig-Tiedemann, M. Keller, D. Paul  
Surface Science, 377-379 (**1997**), 1076-1081

**449**

**Characterization of synthetic membranes by Raman spectroscopy, electron spin resonance, and atomic force microscopy; a review**

K.C. Khulbe, T. Matsuura  
Polymer, 41 (**2000**), 5, 1917-1935

**1301**

**Chemical, optical and tribological characterization of perfluoropolymer films as an anti-stiction layer in micro-mirror arrays**

K.-K. Lee, N.-G. Cha, J.-S. Kim, J.-G. Park, H.-J. Shin  
Thin Solid Films, 377-378 (**2000**), 727-732

**1527**

**Collagen adsorption on poly(methyl methacrylate) : net-like structure formation upon drying.**

Ch.C. Dupont-Gillain, B. Nysten, P.G. Rouxhet  
Polymer Int., 48, 1999, 271-276.

**198**

**Comparison of lamellar thickness and its distribution determined from d.s.c., SAXS, TEM and AFM for high-density polyethylene films having a stacked lamellar morphology**

Z. Hongyi, G.L. Wilkes  
Polymer, 38 (**1997**), 23, 5735-5747

**22**

**Contact resonance imaging - a simple approach to improve the resolution of AFM for biological and polymeric materials**

K. Wadu-Mesthrige, N.A. Amro, J.C. Garno, S. Cruchon-Dupeyrat, G.-Y. Liu  
Applied Surface Science, 175-176 (**2001**), 391-398

**828**

**Cratering in PMMA induced by gold ions: dependence on the projectile velocity**

R.M. Papaleo, L.S. Farenzena, G. Bermudez, M. Alurralde, M.A. De Araujo, R.P. Livi

Nuclear Instruments and Methods in Physics Research Section B:

Beam Interactions with Materials and Atoms, 148 (**1999**), 1-4, 126-131

**832**

**Dewetting of thin polymer films: an X-ray scattering study**

P. Muller-Buschbaum, M. Stamm  
Physica B: Condensed Matter, 248 (**1998**), 1-4, 229-237

**1391**

**Direct observation of polyhydroxyalkanoate chains by atomic force microscopy**

Kumar Sudesh, Zhihua Gan, Ken'ichiro Matsumoto and Yoshiharu Doi  
Ultramicroscopy, 91 (**2002**) 1-4, pp. 157-164

**477**

**Direct observations of the growth of spherulites of poly(hydroxybutyrate-co-valerate) using atomic force microscopy**

T.J. McMaster, J.K. Hobbs, P.J. Barham, M.J. Miles  
Polymer, 39 (**1998**), 12, 2437-2446

**480****Draw-ratio-dependent morphology of biaxially oriented polypropylene films as determined by atomic force microscopy**

H.-Y. Nie, M.J. Walzak, N.S. McIntyre

Polymer, 41 (2000), 6, 2213-2218

**485****Effect of the cure temperature on the morphology of a cyanate ester resin modified with a thermoplastic: characterization by atomic force microscopy**

C. Marieta, M. del Rio, I. Harismendy, I. Mondragon

European Polymer Journal, 36 (2000), 7, 1445-1454

**1402****Electric force microscopy study of the surface electrostatic property of rubbed polyimide alignment layers**

X. Liang, J. Liu, L. Han, H. Tang, S.-Y. Xu

Thin Solid Films, 370 (2000), 1-2, 238-242

**489****Ellipsoid-like structures formed by atomic force microscopy in Langmuir-Blodgett films of PMMA**

G.T. Barnes, J.B. Peng

Thin Solid Films, 284-285 (1996), 444-449

**1650****Entropic Elasticity of Single Polymer Chains of Poly(methacrylic acid) Measured by Atomic Force Microscopy**

C. Ortiz and G. Hadzioannou

Macromolecules 32 (1999), 780-787

**204****Epitaxy of isotactic poly(1-butene): new substrates, impact and attempt at recognition of helix orientation in form I' by AFM**

C. Mathieu, W. Stocker, A. Thierry, J.C. Wittmann, B. Lotz

Polymer, 42 (2001), 16, 7033-7047

**498****Examination of solvent interactions at the surface of poly(ethylene)terephthalate films using atomic force microscopy and infrared spectroscopy**

G. Chen, J.H. Horton, C. Freure

Surface Science, 437 (1999), 1-2, 231-238

**840****Experimental measurement of polyethylene chain modulus by scanning force microscopy**

B. Du, J. Liu, Q. Zhang, T. He

Polymer, 42 (2001), 13, 5901-5907

**844****Film thickness dependence of the domain size in weakly incompatible thin polymer blend films**

P. Muller-Buschbaum, M. Stamm

Colloid and Polymer Science, 279 (2001), 4, 376-381

**69****Friction studies of hydrogel contact lenses using AFM: non-crosslinked polymers of low friction at the surface**

S.H. Kim, C. Marmo, G.A. Somorjai

Biomaterials, 22 (2001), 24, 3285-3294

**1304****Frictional anisotropy and sectorization in poly(4-methyl-1-pentene) lamellar crystals studied by lateral force microscopy**

G.J. Vancso, R. Pearce

Polymer, 39 (1998), 26, 6743-6746

**849****Glass and Structural Transitions Measured at Polymer Surfaces on the Nanoscale**

R. M. Overney, C. Buenavaje, R. Luginbuhl, F. Dinelli

Journal of Thermal Analysis and Calorimetry, 59 (2000), 1/2, 205-225

**850****Glass transition measurements on heterogeneous surfaces**

F. Dinelli, C. Buenavaje, R.M. Overney

Thin Solid Films, 396 (2001), 1-2, 138-145

**851****Glow discharge plasma deposited hexafluoropropylene films: surface chemistry and interfacial materials properties**

B.D. Ratner, R.M. Overney, M.D. Garrison, R. Luginbuhl

Thin Solid Films, 352 (1999), 1-2, 13-21

**853****Growth of solution cast macromolecular p-conjugated nanoribbons on mica**

V. Francke, P. Samor, J.P. Rabe, K. Mullen

Thin Solid Films, 336 (1998), 1-2, 13-15

**519****Harmonic responses of a cantilever interacting with elastomers in tapping mode atomic force microscopy**

M.-H. Whangbo, G. Bar, R. Brandsch, L. Delineau

Surface Science, 448 (2000), 1, L179-L187

**520****Helical chain configuration of isotactic PMMA LB films observed by atomic-force microscopy**

S.-D. Jung, J.-J. Kim, I.-C. Jeon

Synthetic Metals, 71 (1995), 1-3, 2025-2026

**526****Hydrophobic polytetrafluoroethylene-modified PbO<sub>2</sub>: ex situ observations of morphology during nucleation and growth via atomic force microscopy**

H. Chun Nan, H. Bing Joe

Journal of Electroanalytical Chemistry, 388 (1995), 1-2, 53-67

**527****Hysteresis in the distance-sweep curves of elastomers and its implications in tapping mode atomic force microscopy**

G. Bar, L. Delineau, R. Brandsch, M. Ganter, M.-H. Whangbo

Surface Science, 457 (2000), 1-2, L404-L412

**529****Imaging an alginate polymer gel matrix using atomic force microscopy**

A.W. Decho

Carbohydrate Research, 315 (1999), 3-4, 330-333

**1093****Imaging crystals, polymers, and processes in water with the atomic force microscope**

B. Drake, C.B. Prater, A.L. Weisenhorn, S.A.C. Gould, T.R. Albrecht, C.F. Quate, D.S. Cannell, H.G. Hansma, P.K. Hansma  
 Science 243 (**1989**), 1586-1588

**535****Imaging of sub-surface nano particles by tapping-mode atomic force microscopy**

J. Feng, L.-T. Weng, C.-M. Chan, J. Xhie, L. Li  
 Polymer, 42 (**2001**), 5, 2259-2262

**1507****Imaging single-stranded DNA, antigen-antibody reaction and polymerized Langmuir-Blodgett films with an AFM**

A.L. Weisenhorn, H.E. Gaub, H.G. Hansma, R.L. Sinsheimer, G.L. Kelderman and P.K. Hansma,  
 Scanning Microsc. 4 (**1990**) 511.

**264****In situ AFM study of the electrochemical deposition of polybithiophene from propylene carbonate solution**

A. Fujishima, K. Hashimoto, L. Jiang, T. Iyoda, O.A. Semenikhin  
 Synthetic Metals, 110 (**2000**), 3, 195-201

**263****In situ AFM study of the surface morphology of polypyrrole film**

E. Wang, J. Li, M. Green, P.E. West  
 Synthetic Metals, 74 (**1995**), 2, 127-131

**547****In situ atomic force microscopy study of polypyrrole synthesis and the volume changes induced by oxidation and reduction of the polymer**

R.G. Compton, M.F. Suarez  
 Journal of Electroanalytical Chemistry, 462 (**1999**), 2, 211-221

**550****In situ observation of lamellar growth in thin films for poly[(R)-3-hydroxybutyric acid-co-6-hydroxyhexanoic acid] at a high crystallization temperature of 110oC by atomic force microscopy**

Y. Kikkawa, Y. Inoue, H. Abe, T. Iwata, Y. Doi  
 Polymer, 42 (**2001**), 6, 2707-2710

**1028****In-situ scanning probe microscopy for the measurement of thickness changes in an electroactive polymer**

R. Nyffenegger, E. Ammann, H. Siegenthaler, R. Kotz, O. Haas  
 Electrochimica Acta, 40 (**1995**), 10, 1411-1415

**564****Investigation of a stimuli-responsive copolymer by atomic force microscopy**

H.M. Zareie, E. Volga Bulmus, A.P. Gunning, A.S. Hoffman, E. Piskin, V.J. Morris  
 Polymer, 41 (**2000**), 18, 6723-6727

**19****Investigation of biopolymer networks by means of AFM**

Z. Keresztes, T. Rigo, J. Teleki, E. Kalman  
 Applied Physics A: Materials Science & Processing, 72 (**2001**), 7, S113-S116

**136****Investigation of Interactions Between Polymer-coated Nano-Y-TZP Particles by AFM**

Jun Wang, Lian Gao

Journal of Materials Science Letters, 18 (1999), 3, 181-183

**174****Investigation of ion bombarded polymer surfaces using SIMS, XPS and AFM**

J.W. Lee, T.H. Kim, S.H. Kim, C.Y. Kim, Y.H. Yoon, J.S. Lee, J.G. Han

Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, 121 (1997), 1-4 (January), 474-479

**568****Investigation of latex particle morphology and surface structure of the corresponding coatings by atomic force microscopy**

B. Gerharz, R. Kuropka, H. Petri, H.-J. Butt

Progress in Organic Coatings, 32 (1997), 1-4, 75-80

**37****Investigation of polystyrene nanoparticles and DNA-protein complexes by AFM with image reconstruction**

C.F. Zhu, I. Lee, X. Wang, C. Wang, C. Bai

Applied Surface Science, 126 (1998), 3-4, 281-286

**572****Investigation of the radiation induced changes on the surface topology of PVC films by atomic force microscopy**

E. Tan, A. Alacakir, C. Uzun, O. Guven

Radiation Physics and Chemistry, 46 (1995), 4-6, 897-900

**573****Investigation of the stiffness change in, the indentation force and the hydrophobic recovery of plasma-oxidized polydimethylsiloxane surfaces by tapping mode atomic force microscopy**

G. Bar, L. Delineau, A. Hafele, M.-H. Whangbo

Polymer, 42 (2001), 8, 3627-3632

**580****Latex film formation: atomic force microscopy and theoretical results**

F. Lin, D.J. Meier

Progress in Organic Coatings, 29 (1996), 1-4, 139-146

**870****Lithographically defined polymer tips for quartz tuning fork based scanning force microscopes**

T. Akiyama, U. Staufer, N.F. de Rooij, L. Howald, L. Scandella

Microelectronic Engineering, 57-58 (2001), 769-773

**583****Local elasticity measurement on polymers using atomic force microscopy**

H.-Y. Nie, W. Mizutani, H. Tokumoto, M. Motomatsu

Thin Solid Films, 273 (1996), 1-2, 143-148

**594****Measuring the thermal properties of photoresist thin films using atomic force microscopy**

A. Kawai

Thin Solid Films, 273 (1996), 1-2, 308-311

**875****Membrane characterization by means of pneumatic scanning force microscopy**

H. Kamusewitz, M. Keller, D. Paul

Thin Solid Films, 264 (1995), 2, 184-193

**599****Mesostructure of polymer/carbon black composites observed by conductive probe atomic force microscopy**

J. Ravier, F. Houze, F. Carmona, O. Schneegans, H. Saadaoui

Carbon, 39 (2001), 2, 314-318

**603****Microphase domains of poly(styrene-block-ethylene/butylene-block-styrene) triblock copolymers studied by atomic force microscopy**

M. Motomatsu, W. Mizutani, H. Tokumoto

Polymer, 38 (1997), 8, 1779-1785

**606****Microstructure of block copolymers containing a conjugated segment, as studied with atomic force microscopy**

R. Lazzaroni, P. Leclere, A. Couturiaux, V. Parente, B. Francois, J.L. Bredas

Synthetic Metals, 102 (1999), 1-3, 1279-1282

**879****Microstructure study of acrylic polymer-silica nanocomposite surface by scanning force microscopy**

M. Motomatsu, T. Takahashi, N. Heng-Yong, W. Mizutani, H. Tokumoto

Polymer, 38 (1997), 1, 177-182

**609****Miscibility and surface crystal morphology of blends containing poly(vinylidene fluoride) by atomic force microscopy**

C.-S. Ha, W.-K. Lee

Polymer, 39 (1998), 26, 7131-7134

**202****Modelling and simulation of the permanganic etching of banded spherulitic polyethylene: correlation with AFM observations**

L. Markey, J.J. Janimak, G.C. Stevens

Polymer, 42 (2001), 14, 6221-6230

**1316****Modification and structuring of conducting polymer films on insulating substrates by ion beam treatment**

T. Asmus, G.K. Wolf

Nuclear Instruments and Methods in Physics Research Section B:

Beam Interactions with Materials and Atoms, 166-167 (2000), 732-736

**610****Modification of poly (3-methylthiophene) (PMET) structure during electrochemical doping-undoping, studied by in situ atomic force microscopy (ECAFM)**

F. Chao, M. Costa, C. Tian

Synthetic Metals, 75 (1995), 2, 85-94

**1373****Monitoring high-temperature solid-solid phase transitions of HMX with atomic force microscopy**

Brandon L. Weeks, Chantel M. Ruddle, Joseph M. Zaug and Debra J. Cook

Ultramicroscopy, 93 (2002) 1, pp. 19-23

**623****Morphological investigation by atomic force microscopy and light microscopy of electropolymerised polypyrrole films**

J.S. Shapiro, M.J. Miles, W.T. Smith

Polymer, 41 (2000), 9, 3349-3356

**625****Morphology and phase behaviour of blends of syndiotactic and isotactic polypropylene: 1. X-ray scattering, light microscopy, atomic force microscopy, and scanning electron microscopy**

R. Thomann, J. Kressler, S. Setz, W. Chun, R. Mulhaupt

Polymer, 37 (1996), 13, 2627-2634

**1370****Morphology and roughness of high-vacuum sublimed oligomer thin films**

F. Biscarini, P. Samorí, A. Lauria, P. Ostoja, R. Zamboni, C. Taliani, P. Viville, R. Lazzaroni, J. L. Brédas

Thin Solid Films 284-285 (1996) 439-443

**629****Nanomechanical measurements on polymers using contact mode atomic force microscopy**

J. Mc Laughlin, P. Lemoine

Thin Solid Films, 339 (1999), 1-2, 258-264

**637****Nanoscopic measurements of the electrostriction responses in P(VDF/TrFE) ultra-thin-film copolymer using atomic force microscopy**

K. El Hami, H. Yamada, K. Matsushige

Applied Physics A: Materials Science &amp; Processing, 72 (2001), 3, 347-350

**886****Non-destructive imaging of delicate polymer surfaces using scanning force microscopy tips modified with hydrophobic self-assembled monolayers**

G.J. Leggett, B.D. Beake

Polymer, 40 (1999), 21, 5973-5976

**660****On the formation of oriented nanometer scale patterns on amorphous polymer surfaces studied by atomic force microscopy**

J.P. Pickering, G.J. Vancso

Applied Surface Science, 148 (1999), 3-4, 147-154

**134****On the use of nanoscale indentation with the AFM in the identification of phases in blends of linear low density polyethylene and high density polyethylene**

M. S. Bischel, M. R. Vanlandingham, R. F. Eduljee, J. W. Gillespie, Jr., J. M. Schultz

Journal of Materials Science (full set), 35 (2000), 1, 221-228

**888****Phase-contrast scanning force microscopy and chemical heterogeneity of GR polysulfone ultrafiltration membranes**

L. Palacio, P. Pradanos, A. Hernandez, M.J. Ariza, J. Benavente, M. Nystrom

Applied Physics A: Materials Science &amp; Processing, 73 (2001), 5, 555-560

**199****Photooxidation of blends of polystyrene and poly(vinyl methyl ether): FTIR and AFM studies**

B. Mailhot, S. Morlat, J.-L. Gardette

Polymer, 41 (**2000**), 6, 1981-1988**889****Poly-para-phenylene-ethynylene assemblies for a potential molecular nanowire: An SFM study**

J.P. Rabe, K. Mullen, T. Mangel, V. Francke, P. Samori

Optical Materials, 9 (**1998**), 1-4, 390-393**892****Probing glass transition of PMMA thin films at the nanometer scale with single ion bombardment and scanning force microscopy**

R.M. Papaleo, L.D. de Oliveira, L.S. Farenzena, R.P. Livi

Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, 185 (**2001**), 1-4 (December), 55-60**672****Probing polymer interdiffusion in carboxylated latices with force modulation atomic force microscopy**

A.-C. Hellgren

Progress in Organic Coatings, 34 (**1997**), 1-4, 91-99**673****Probing soft polymeric coatings of a capillary by atomic force microscopy**

R. Barberi, J.J. Bonvent, R. Bartolino, J. Roeraade, L. Capelli, P.G. Righetti

Journal of Chromatography B: Biomedical Sciences and Applications, 683 (**1996**), 1, 3-13**674****Probing the electrochemical deposition and/or desorption of self-assembled and electropolymerizable organic thin films by surface plasmon spectroscopy and atomic force microscopy**

W. Knoll, J. Mack, G. Jung, V. Scheumann, A. Badia, M. Zizlsperger, S. Arnold

Sensors and Actuators B: Chemical, 54 (**1999**), 1-2, 145-165**682****Real-time crystallization study of poly(*e*-caprolactone) by hot-stage atomic force microscopy**

L.G.M. Beekmans, G.J. Vancso

Polymer, 41 (**2000**), 25, 8975-8981**683****Real-time imaging of melting and crystallization in poly(ethylene oxide) by atomic force microscopy**

G.J. Vancso, R. Pearce

Polymer, 39 (**1998**), 5, 1237-1242**900****Scanning force microscopic investigation of plasticity and damage mechanisms in polypropylene spherulites under simple shear**

C. G'Sell, G. Castelein, G. Coulon

Polymer, 40 (**1999**), 1, 95-110**902****Scanning force microscopy application to polymer surfaces for novel nanoscale surface characterization**

M. Motomatsu, H.-Y. Nie, W. Mizutani, H. Tokumoto

Thin Solid Films, 273 (**1996**), 1-2, 304-307

**904****Scanning force microscopy in a liquid on single latent ion tracks: Towards applications in polymers and atomic resolution on crystals**

F.M. Ohnesorge, A. Muller, R. Neumann

Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, 166-167 (**2000**), (May 02), 938-943**908****Scanning force microscopy of bulk-filled uniaxially oriented poly(ethylene terephthalate) films**

B.D. Beake, J.S.G. Ling, G.J. Leggett

Polymer, 41 (**2000**), 6, 2241-2248**912****Scanning force microscopy of plasma polymerised hexane: information on the mechanical properties of thin films from tip-induced wear**

B.D. Beake, G.J. Leggett, M.R. Alexander

Polymer, 42 (**2001**), 6, 2647-2653**913****Scanning force microscopy of poly(ethylene terephthalate) surfaces: comparison of SEM with SFM topographical, lateral force and force modulation data**

J.S.G. Ling, G.J. Leggett

Polymer, 38 (**1997**), 11, 2617-2625**914****Scanning force microscopy of polyester films: contact versus non-contact imaging and tip-induced wear experiments**

A.J. Murray, G.J. Leggett, J.S.G. Ling

Polymer, 39 (**1998**), 24, 5913-5921**915****Scanning force microscopy of polyimide surfaces**

C.D. Dimitrakopoulos, S.P. Kowalczyk

Thin Solid Films, 295 (**1997**), 1-2, 162-168**1053****Scanning probe microscopy of biomolecules and polymeric biomaterials**

M.C. Davies, G.J. Leggett, D.E. Jackson, S.J.B. Tendler

Journal of Electron Spectroscopy and Related Phenomena, 81 (**1996**), 3, 249-268**1056****Scanning probe microscopy of organic and polymeric films: from self-assembled monolayers to composite multilayers**

V.V. Tsukruk, D.H. Reneker

Polymer, 36 (**1995**), 9, 1791-1808**1059****Scanning probe microscopy of polymers (in russian)**

I.V. Yaminsky

Информационный бюллетень РФФИ, 5 (**1997**), 3, 180**697****Shear banding in polyamide 6 films as revealed by atomic force microscopy**

V. Ferreiro, Y. Pennec, R. Seguela, G. Coulon

Polymer, 41 (**2000**), 4, 1561-1569

**77**

**Single-molecule force spectroscopy on polysaccharides by AFM - nanomechanical fingerprint of  $\alpha$ -(1,4)-linked polysaccharides**

H. Li, X. Zhang, M. Rief, F. Oesterhelt, H.E. Gaub, J. Shen  
Chemical Physics Letters, 305 (**1999**), 3-4, 197-201

**97**

**STM- and AFM-investigations of one- and two-dimensional polypyrrole structures on electrodes**

C. Froeck, A. Bartl, L. Dunsch  
Electrochimica Acta, 40 (**1995**), 10, 1421-1425

**261**

**Structural properties of oriented polydiacetylenes: AFM and time-resolved spectroscopy characterizations**

V. Da Costa, J. Le Moigne, J.-Y. Bigot, T.A. Pham  
Synthetic Metals, 81 (**1996**), 2-3, 151-154

**716**

**Structure of polymer within the coating: an atomic force microscopy and small angle neutrons scattering study**

M. Joanicot, V. Granier, K. Wong  
Progress in Organic Coatings, 32 (**1997**), 1-4, 109-118

**717**

**Structures and local electrical properties of ferroelectric polymer thin films in thermal process investigated by dynamic-mode atomic force microscopy**

T. Fukuma, K. Kobayashi, T. Horiuchi, H. Yamada, K. Matsushige  
Thin Solid Films, 397 (**2001**), 1-2, 133-137

**260**

**Study of polyaniline and water-based polyurethane nanocomposite by TEM, AFM and SNOM**

S.-M. Yang, S.-D. Chow, D.-S. Lin  
Synthetic Metals, 121 (**2001**), 1-3, 1305-1306

**932**

**Study of the surface glass transition behaviour of amorphous polymer film by scanning-force microscopy and surface spectroscopy**

A. Takahara, T. Kajiyama, K. Tanaka  
Polymer, 39 (**1998**), 19, 4665-4673

**1409**

**Study of the surface potential and photovoltage of conducting polymers using electric force microscopy**

J.N. Barisci, R. Stella, G.M. Spinks, G.G. Wallace  
Synthetic Metals, 124 (**2001**), 2-3, 407-414

**1319**

**Study on surface structure of amorphous polymer blends on the basis of lateral force microscopy**

W.-K. Lee  
Polymer, 40 (**1999**), 20, 5631-5636

**1069**

**Substrate-dependent dispersion behavior of polymer-protected Pt colloid studied by SPM**

J. Guan, C. Wang, C. Bai, M. Su  
Applied Surface Science, 133 (**1998**), 1-2, 23-26

**723**

**Surface characterisation of ultraviolet-ozone treated PET using atomic force microscopy and X-ray photoelectron spectroscopy**

C. Ton-That, D.O.H. Teare, P.A. Campbell, R.H. Bradley

Surface Science, 433-435 (1999), 278-282

**201**

**Surface characterization of ethylene-vinyl acetate (EVA) and ethylene-acrylic acid (EAA) co-polymers using XPS and AFM**

R.L. McEvoy, S. Krause, P. Wu

Polymer, 39 (1998), 21, 5223-5239

**724**

**Surface chemistry-mechanical property relationship of low density polyethylene: an IR+visible sum frequency generation spectroscopy and atomic force microscopy study**

D.H. Gracias, D. Zhang, Y.R. Shen, G.A. Somorjai

Tribology Letters, 4 (1998), 3/4, 231-235

**725**

**Surface crystallography of polybutene-1 by atomic force microscopy**

A.K. Winkel, M.J. Miles

Polymer, 41 (2000), 6, 2313-2317

**726**

**Surface microstructure of a Kevlar aramid fibre studied by direct atomic force microscopy**

S. Rebouillat, J.-B. Donnet, K.W. Tong

Polymer, 38 (1997), 9, 2245-2249

**937**

**Surface Modifications Produced by N<sub>2</sub> and O<sub>2</sub> RF Plasma Treatment on a Synthetic Vulcanized Styrene-Butadiene Rubber**

Ana B. Ortiz-Magan, M. Mercedes Pastor-Blas, Teresa P. Ferrandiz-Gomez, Carmen Morant-Zacares, Jose Miguel Martin-Martinez

Plasmas and Polymers, 6 (2001), 1/2, 81-105

**728**

**Surface molecular diffusion in latex films observed by atomic force microscopy**

M. Song, D.J. Hourston, H. Zhang, A. Hammiche, H.M. Pollock

Polymer, 42 (2001), 14, 6299-6303

**1071**

**Surface morphology changes in polythiophene and polythiophene derivative films after being oxidized with iodine. A scanning probe microscopy study**

D.Y. Zhang, T.L. Porter

Synthetic Metals, 74 (1995), 1, 55-58

**732**

**Surface observation of Langmuir-Blodgett films of polyamic acid alkylamine salts and polyimide by atomic force microscopy and friction force microscopy**

S. Yokoyama, M. Kakimoto, Y. Imai

Synthetic Metals, 81 (1996), 2-3, 265-270

**1320**

**Surface relaxation behavior of proton- and perfluoroalkyl-terminated poly(2-vinylpyridine) films**

X. Jiang, K. Tanaka, A. Sakai, A. Takahara, T. Kajiyama

Polymer, 42 (2001), 21, 8959-8964

**738****Surface structure of Kevlar(R) fiber studied by atomic force microscopy and inverse gas chromatography**

S. Rebouillat, J.-B. Donnet, J.C.M. Peng

Polymer, 40 (**1999**), 26, 7341-7350**741****Surface structure of polycarbonate urethanes visualized by atomic force microscopy**

I. Revenko, Y. Tang, J.P. Santerre

Surface Science, 491 (**2001**), 3, 346-354**940****Surface study of plasma- and UV-polymerized styrene films using scanning force microscopy and in-situ photoelectron spectroscopy**

S. Schelz, N. Schuhler, T. Richmond, P. Oelhafen

Thin Solid Films, 266 (**1995**), 2, 133-139**942****Surface tracks in polymers induced by MeV heavy-ion impacts**

R.M. Papaleo, L.S. Farenzena, M.A. De Araujo, R.P. Livi

Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, 151 (**1999**), 1-4 (May 02), 135-139**750****Tapping-mode atomic force microscopy study of the near-surface composition of a styrene-butadiene-styrene triblock copolymer film**

M.-H. Whangbo, D. Denley, S.N. Magonov, J. Cleveland, V. Elings

Surface Science, 389 (**1997**), 1-3, 201-211**761****The heavy ion tracks in polymers investigation by means of high-effective liquid chromatography and atomic-force microscopy**

A.I. Vilensky, O.G. Larionov, R.V. Gainutdinov, A.L. Tolstikhina, V.Y. Kabanov, D.L.

Zagorski, E.V. Khataibe, A.N. Netchaev, B.V. Mchedlishvili

Radiation Measurements, 34 (**2001**), 1-6, 75-80**945****The interface surfaces of a CN-substituted poly(phenylenevinylene) light-emitting diode, a morphological study**

J.R. Rasmussen, P. Broms, J. Birgerson, R. Erlandsson, W.R. Salaneck

Synthetic Metals, 79 (**1996**), 1, 75-84**50****The lamellar period in symmetric diblock copolymer thin films studied by neutron reflectivity and AFM**

N.B. Larsen, N. Gadegaard, K. Almdal, K. Mortensen

Applied Surface Science, 142 (**1999**), 1-4, 608-613**763****The lamellar thickness of melt crystallized isotactic polystyrene as determined by atomic force microscopy**

S.J. Sutton, K. Izumi, H. Miyaji, K. Fukao, Y. Miyamoto

Polymer, 37 (**1996**), 24, 5529-5532**947****The mechanism of PTFE and PE friction deposition: a combined scanning electron and scanning force microscopy study on highly oriented polymeric sliders**

H. Schonherr, G.J. Vancso

Polymer, 39 (**1998**), 23, 5705-5709

**948**

**The nano-scratch tester (NST) as a new tool for assessing the strength of ultrathin hard coatings and the mar resistance of polymer films**

R. Consiglio, N.X. Randall, B. Bellaton, J. von Stebut

Thin Solid Films, 332 (1998), 1-2, 151-156

**951**

**The scanning force microscope as a tool for the detection of local mechanical properties within the interphase of fibre reinforced polymers**

M. Munz, H. Sturm, G. Hinrichsen, E. Schulz

Composites Part A: Applied Science and Manufacturing, 29 (1998), 9-10, 1251-1259

**767**

**The structure of highly textured quasi-single-crystalline high-density polyethylene probed by atomic force microscopy and small-angle X-ray scattering**

H. Schonherr, G.J. Vancso, A.S. Argon

Polymer, 36 (1995), 11, 2115-2121

**68**

**The use of SIMS, XPS and in situ AFM to probe the acid catalysed hydrolysis of poly(orthoesters)**

N.M. Franson, M.C. Davies, A.M. Brown, J. Heller, S.R. Leadley, A.J. Paul, J.F. Watts, K.M. Shakesheff

Biomaterials, 19 (1998), 15, 1353-1360

**279**

**Thin block copolymers films: film formation and corrugation under an AFM tip**

J.H. Maas, M.A. Cohen Stuart, G.J. Fleer

Thin Solid Films, 358 (2000), 1-2, 234-240

**952**

**Thin poly(3,3'-phthalidylidene-4,4'-biphenylene) films studied by scanning force microscopy**

J.R. Rasmusson, T. Kugler, R. Erlandsson, W.R. Salaneck, A. Lachinov

Synthetic Metals, 76 (1996), 1-3, 195-200

**1074**

**Thin polypyrrole films formed on mica and alumina with and without surfactant present: characterization by scanning probe and optical microscopy**

W.-L. Yuan, E.A. O'Rear, G. Cho, G.P. Funkhouser, D.T. Glatzhofer

Thin Solid Films, 385 (2001), 1-2, 96-108

**776**

**TMDSC and Atomic Force Microscopy Studies of Morphology and Recrystallization in Polyesters Including Oriented Films**

B. B. Sauer, W. G. Kampert, R. S. McLean, P. F. Garcia

Journal of Thermal Analysis and Calorimetry, 59 (2000), 1/2, 227-243

**295**

**Tribology of a polystyrene polymer film investigated with an AFM**

D. Michel, S. Kopp-Marsaudon, J.P. Aime

Tribology Letters, 4 (1998), 1, 75-80

**784**

**Visualization of PEO-PBLA-Pyrene Polymeric Micelles by Atomic Force Microscopy**

Jiahorng Liaw, Takao Aoyagi, Kazunori Kataoka, Yasuhisa Sakurai, Teruo Okano

Pharmaceutical Research, 15 (1998), 11, 1721-1726

**203****XPS and AFM surface studies of solvent-cast PS/PMMA blends**

C. Ton-That, A.G. Shard, D.O.H. Teare, R.H. Bradley

Polymer, 42 (**2001**), 3, 1121-1129