

## CONTENTS

---

### VOL. 1

<b>Introduction.....</b>	<b>XXV</b>
--------------------------	------------

### **Applications in Biology and Medicine**

<b>Application of a novel technique for observing internal ultrastructure of human chromosomes with known karyotype</b> Mohammad Ghazizadeh and Ramin Ghazizadeh.....	3-10
<b>Investigation of the ultrastructure of yeast using cryo-immuno-electron microscopy</b> Muriel Mari, Janice Griffith and Fulvio Reggiori.....	11-18
<b>Image processing in electron tomography</b> J.J. Fernández, J.I. Agulleiro, J.R. Bilbao-Castro, A. Martínez, I. García, F.J. Chichón, J. Martín-Benito and J.L. Carrascosa.....	19-28
<b>Scanning electron microscopy and vascular corrosion casting for the characterization of microvascular networks in human and animal tissues</b> B. Minnich and A. Lametschwandtner.....	29-39
<b>Use of light and electron microscopy to study neuropharmacology of neuroprotection</b> Hari S. Sharma, A. Sharma and José V. Lafuente.....	40-51
<b>The Use of EM for Studying Apoptotic Changes and Proliferative Activity of Oral Carcinoma and Jaw Lymphoma</b> Professor Raja Kummoona.....	52-65
<b>Morphogenesis of Human Enterovirus 71: An Electron Microscopy Analysis Coupled with Immunogold Labeling Techniques</b> Cai Yun CHEN, Hui Min ONG and Justin Jang Hann CHU.....	66-74
<b>Microscopic studies on characterization of blood cells of endangered sea turtles</b> J. Orós, A. B. Casal, and A. Arencibia.....	75-84
<b>Infection and phagocytosis: analysis in semen with transmission electron microscopy</b> Guadalupe Gallegos-Avila, Jesús Ancer-Rodríguez, Marta Ortega-Martínez and Gilberto Jaramillo-Rangel.....	85-92
<b>Electron microscopy studies of genetically modified neurons and synapses</b> I. Nikonenko and D. Muller.....	93-99

<b>In Situ Detection of Specific Gene Expression During and Immediately After Transcription at Electron Microscopic Level</b> S. Kitazawa, K. Mori, Y Idei, M. Fujimoto, K. Kito, R. Haraguch, Y. Abe, T. Kondo and R. Kitazawa.....	100-110
<b>Contribution of microscopy to the study of proliferating blood cells in <i>Ciona intestinalis</i> immune response</b> M. A. Di Bella and G. De Leo.....	111-115
<b>Electronic microscopy of the genus <i>Arthrinium</i>. A study model for the knowledge of Dematiaceous Fungi</b> C. Adelantado, E.L. Arosemena and M.A. Calvo.....	116-127
<b>Applications of transmission electron microscopy to virus detection and identification</b> F.F. Vale, A.C. Correia, B. Matos, JF Moura Nunes and A.P. Alves de Matos.....	128-136
<b>The antennal sensory function in the oldest pterygote insects: an ultrastructural overview</b> M. Reborá, S. Piersanti and E. Gaino.....	137-145
<b>Advances in multilabeling for TEM and CLSM using primary antibodies derived from the same species. Application of Fab fragments to co-localize olive pollen allergens</b> S. Morales, MI. Rodríguez-García and J.D. Alché.....	146-150
<b>A simple and reliable method to prepare semen for transmission electron microscopy</b> M. Relucenti, L. Petruziello, G. Familiari and R. Heyn.....	151-155
<b>Scanning microscopy of ciliary organelles</b> Marina Silveira.....	156-161
<b>The use of transmission electron microscopy to solve problems in the study of the female gonad in platyhelminths</b> A. Falleni, C. Ghezzi, and P. Lucchesi.....	162-169
<b>Electron Microscopic Radioautography and Its Application to DNA, RNA and Protein Synthesis in Mitochondria of Various Animal Organs</b> T. Nagata.....	170-181
<b>Application of Light and Scanning Electron Microscopy in the Identification of Herbal Medicines</b> R. Serrano, G. da Silva and O. Silva.....	182-190
<b>Electron microscopy approaches for the investigation of the cellular targets of trypanocidal agents in <i>Trypanosoma cruzi</i></b> M.N.C. Soeiro, A. Daliry, C.F. Silva, D.G.J. Batista, E.M. de Souza, G.M. Oliveira, K. Salomão, R.F.S. Menna-Barreto and S.L. de Castro.....	191-203

<b>Application of environmental scanning electron microscopy for study of biofilms in medical devices</b> A. Trinidad, A. Ibáñez, D. Gómez, J.R. García-Berrocal and R. Ramírez-Camacho.....	204-210
<b>Autoschizis: a new cell death induced found in tumour cells induced by oxidative stress mechanism</b> Jacques Gilloteaux , J.M. Jamison, D. Arnold, K. McGuire, M. Loukas, J.P. Sczepaniak and J.L. Summers.....	211-220
<b>Importance of Electron Microscopy to reveal species-specific characteristics of gland secretion</b> Gabriella Chieffi Baccari, Alessandra Santillo and Sergio Minucci.....	221-227
<b>Transmission Electron Microscopy of the nuclear matrix and its proteins</b> C. D'Arrigo, P. Barboro, D. Galante and C. Balbi.....	228-235
<b>Using transmission electron microscopy to solve issues related with biological research in animal reproduction</b> L.M. Pastor, V. Seco-Rovira, E. Beltrán-Frutos, C. Ferrer, A. Zuasti, J. Pallares, A. Calvo, X. Lucas, J. Roca, J.M. Vazquez and E.A. Martínez.....	236-240
<b>Application of monoclonal antibody and ultrathin cryosections in immunogold electron microscopy: a study on recombinant human inhibitor expressed in bacterial cells</b> T. Zavašnik-Bergant.....	241-247
<b>Scanning electron microscopy of plant surfaces: simple but sophisticated methods for preparation and examination</b> H. J. Ensikat, P. Ditsche-Kuru and W. Barthlott.....	248-255
<b>A review of SEM and TEM studies on the hybridisation of dentine</b> Ario Santini, Egle Milia and Vesna Miletic.....	256-268
<b>Making invisible visible – Electron tomography shows a lattice surface layer in whole-mounts of <i>Lactobacillus brevis</i></b> Peter Engelhardt, Fang Zhao, Pentti Jääskeläinen, Ritva Serimaa, Ilkka Palva and Veli-Pekka Lehto.....	269-276
<b>Correlative light and electron microscopic exploration of endocytic organelles</b> C. Meisslitzer-Ruppitsch, T. Prikowitsch, J. Neumüller, M. Pavelka and A. Ellinger.....	277-285
<b>Assessment of bacteria-textile interactions using Scanning Electron Microscopy: A study on LbL chitosan/alginate coated cotton</b> Ana P. Gomes, João F. Mano, João A. Queiroz and Isabel C. Gouveia.....	286-292
<b>SEM image analysis as a tool for the surface characterization of pharmaceutical pellets obtained by extrusion-spheronization</b> L. Alonso, R. Martínez-Pacheco and J.L. Gómez-Amoza.....	293-298

<b>Nissl substance and cellular structures involved in the intraneuronal and neuroglial transport in the crayfish stretch receptor</b> G.M.Fedorenko and A.B. Uzdensky.....	299-306
<b>Morphological changes induced in bacteria as evaluated by electron microscopy</b> J. Díaz-Visurraga, G. Cárdenas and A. García.....	307-315
<b>Localizing cellular uptake of nanomaterials in vitro by transmission electron microscopy</b> C.T. Ng, J.J. Li, R. Perumalsamy, F. Watt, L.Y.L. Yung and B.H. Bay.....	316-320
<b>High resolution ultrastructural investigation of insect sensory organs using field emission scanning electron microscopy</b> Vonnice D.C. Shields.....	321-328
<b>Methodology for the characterization and identification by sem-eds of atmospheric particles from different pollutions emission</b> A. Campos-Ramos, A. Aragón Piña, Xavier Querol and Andrés Alastuey.....	329-333
<b>SEM Study on Old-styled Thai Gold Mosaic Glass Samples</b> K. Won-in and P. Dararutana.....	334-336
<b>Two-dimensional crystallization of membrane protein complexes for structure-function studies by electron crystallography</b> T.M. Dreaden, M.C. Johnson, B. Barquera, B.A. Barry and I. Schmidt-Krey.....	337-346
<b>Use of transmission electron microscopy for studying airway remodeling in a chronic ovalbumin mice model of allergic asthma</b> G. D. Leishangthem, U. Mabalirajan, T. Ahmad, B. Ghosh, A. Agrawal, T. C. Nag and A. K. Dinda.....	347-353
<b>Investigation of Nanostructured Organic Solar Cells with Transmission Electron Microscopy</b> Golap Kalita, Koichi Wakita and Masayoshi Umeno.....	354-360
<b>Evaluation of morphological changes in experimental models of myocardial infarction: Electron and light microscopical evidence</b> Saurabh Bharti, Sachin Arora, Dharamvir S Arya.....	361-371
<b>Scanning electric microscopy used to analyze the effect of gamma irradiation on enamel and dentin</b> C.J. Soares, C.C.G. Moura, P.B. Soares and L.Z. Naves.....	372-378
<b>Unveiling 3D Biological Structures by X-ray Microtomography</b> R. Mizutani, A. Takeuchi, K. Uesugi, S. Takekoshi, R.Y. Osamura and Y. Suzuki.....	379-386

<b>Use of Infrared Microspectroscopy to discriminate foodborne pathogens</b> S. de Lamo-Castellví and L. E. Rodríguez-Saona.....	387-390
<b>X-ray in-line phase microtomography for biomedical applications</b> M. Langer, R. Boistel, E. Pagot, P. Cloetens, F. Peyrin.....	391-402
<b>Fourier Transform Infrared (FTIR) Microspectroscopy of Immature, Mature and Degenerated Articular Cartilage</b> S. Saarakkala, L. Rieppo, J. Rieppo and J.S. Jurvelin.....	403-414
<b>Digital X-ray microscopy of small biological samples using Medipix2 semiconductor pixel detector</b> J. Dammer, F. Weyda, J. Jakůbek, V. Sopko, J. Žemlička and R. Hanus.....	415-421
<b>Synchrotron Radiation Infrared Microspectroscopy (SR-IRMS) of living-cells in physiological environment</b> Giovanni Birarda, Gianluca Greci, and Lisa Vaccari.....	422-432
<b>Atomic Force Microscopy indentation of living cells</b> Lucel Sirghi.....	433-440
<b>Visualization of cell structure in situ by atomic force microscopy</b> María de L. Segura-Valdez, Alma Zamora-Cura, Nadia Gutiérrez-Quintanar, Ernesto Villalobos-Nájera, Jennifer Berenice Rodríguez-Vázquez, Tania Citlalli Galván-Arrieta, Diana Jiménez-Rodríguez, Lourdes T. Agredano-Moreno, Reyna Lara-Martínez and Luis F. Jiménez-García.....	441-448
<b>The principles and biological applications of cell traction force microscopy</b> James H-C. Wang, and Bin Li.....	449-458
<b>Detecting DNA damage at a single-molecule level by atomic force microscopy</b> Yong Jiang and Piotr E. Marszalek.....	459-469
<b>Study of the mechanical properties of single cells as biocomposites by atomic force microscopy</b> M. Starodubtseva, S. Chizhik, N. Yegorenkov, I. Nikitina and E. Drozd.....	470-477
<b>Force spectroscopy addresses fundamental problems in cell physiology</b> Hirohide Takahashi, Yaron R. Silberberg, Masahiro Kumeta, J. Michael Edwardson and Kunio Takeyasu.....	478-488
<b>Atomic Force Microscopy Studies of DNA Release in Gene Delivery Dynamics</b> Yi Zou, Lei Wan and Guangzhao Mao.....	489-499
<b>Quantitative analysis of drug induced cellular morphology using AFM</b> Sunil Kumar and Sohini Roy.....	500-506

<b>Antibody recognition force microscopy (Ig-RFM) to identify and map the nanoscale distribution of protein molecules on the surface of live microorganisms</b> Brian H. Lower.....	507-514
<b>Combined AFM/Raman microspectroscopy for characterization of living cells in near physiological conditions</b> A.H. Zhou, G.D. McEwen and Y.Z. Wu.....	515-522
<b>AFM investigations of various disturbing factors on bacterial cells</b> H. Nikiyan, A. Vasilchenko and D. Deryabin.....	523-529
<b>Combining atomic force microscopy and live cell imaging to study calcium responses in dorsal root ganglion neurons to a locally applied mechanical stimulus</b> L. Ponce, A. Berquand, M. Petersen and M. Hafner.....	530-536
<b>Study of a 2-branched (1→3)-<math>\beta</math>-D-glucan from <i>Lactobacillus suebicus</i> CUPV221 as observed by Tapping mode Atomic Force Microscopy</b> C. Marieta and M. T. Dueñas.....	537-545
<b>Quantification of kinetics of biomembrane degradation by AFM</b> A. Bitler, Naama Lev and Yechiel Shai.....	546-553
<b>Analysis of Surface Mechanical Properties of Unworn and Worn Silicone Hydrogel Contact Lenses Using Nanoindentation with AFM</b> González-Méijome JM, Almeida JB and Parafita MA.....	554-559
<b>Comparison of poly (methyl methacrylate) and acrylic hydrophobic intraocular lens surface irregularities using atomic force microscopy</b> Koel Chaudhury, Rashmi Mukherjee and Partha Biswas.....	560-565
<b>The use of confocal laser scanning microscopy in endodontic research: sealer/dentin interfaces</b> M. Marciano, R. Ordinola-Zapata, B. Cavalini Cavenago, A. del Carpio Perochena, C. Monteiro Bramante, I. Gomes de Moraes, R. Brandão Garcia, P. Gagliardi Minotti and M. Hungaro Duarte.....	566-570
<b>Review: Upconversion microscopy for biological applications</b> D.H. Kim and J.U. Kang.....	571-582
<b>The use of confocal laser scanning microscopy for the study of dentin infection</b> R. Ordinola-Zapata, C. Monteiro Bramante, I. Gomes de Moraes, N. Bernardineli, V. Carvalho Porto, AP. Campanelli, RB Garcia and M. Húngaro Duarte.....	583-589
<b>Confocal scanning laser microscopy in the study of biofilm formation in tissues of the upper airway in otolaryngologic diseases</b> Paraje María Gabriela.....	590-596

<b><i>In vivo</i> oral biofilm analysis by confocal laser scanning microscopy: Methodological approaches</b>	
Tomás I, Henderson B, Diz P and Donos N.....	597-606
<b>Taxonomical discrimination of pollen grains by using confocal laser scanning microscopy (CLSM) imaging of autofluorescence</b>	
A.J. Castro, J.D. Rejón, M. Fendri, M.J. Jiménez-Quesada, A. Zafra, J.C. Jiménez-López, M.I. Rodríguez-García and J.D. Alché.....	607-613
<b>Application of Confocal Microscopy for Quantification of Intracellular Mycobacteria in Macrophages</b>	
P. Bettencourt, D. Pires, N. Carmo and E. Anes.....	614-621
<b>Imaging <i>In vitro</i> Anti-biofilm Activity to Visualize the Ultrastructural Changes</b>	
S. Sasidharan, L. Yoga Latha and T. Angeline.....	622-626
<b>Advanced approaches of confocal microscopy to study interactions of membrane active peptides with living cells: hemolytic activity of latarcin Ltc1</b>	
O.V. Samsonova, A.S. Arseniev, M.P. Kirpichnikov and A.V. Feofanov.....	627-632
<b>Towards <i>In Vivo</i> microimaging of Lung Inflammation and Repair: Current issues and future directions</b>	
O. Lesur, P.G. Charette, Ph Jouvét, F. Cheriet and F. Chagnon.....	633-640
<b>Epifluorescence, confocal laser microscopy and colocalization analyses in the study of protein glutathionylation in primary cultured fibroblasts and in their <i>in situ</i> extracted matrix</b>	
Stefania Petrini, Fiorella Piemonte, Chiara Passarelli and Enrico Bertini.....	641-648
<b>Two and three dimensional imaging in confocal laser scanning microscopy - application for collagen VI defect studies</b>	
Stefania Petrini, Adele D'Amico, Teresa Rizza, Marianna Coccetti, Rosalba Carozzo, Francesca Gualandi and Enrico Bertini.....	649-657
<b>Breaking down the genome organization and karyotype differentiation through the epifluorescence microscope lens: insects and fishes as models</b>	
D. C. Cabral-de-Mello and C. Martins.....	658-669
<b>Study of molecular dynamics using fluorescently tagged molecules in live cells</b>	
C. N. Goulbourne, A. N. Malhas, H. Doolittle, A. T. Ismail and D. J. Vaux.....	670-678
<b>High resolution three-dimensional imaging of membrane junctional protein dysfunction using deconvolution microscopy</b>	
D. Segretain, J. Gilleron, J. Dompierre, D. Carette, J.-P. Denizot and G. Pointis.....	679-687

<b>Variations of the spatial fluorescence distribution in ABL gene chromatin domains measured in blood cell nuclei by SMI microscopy after COMBO – FISH labelling</b> C. Grossmann, J. Schwarz-Finsterle, E. Schmitt, U. Birk, G. Hildenbrand, C. Cremer, L. Trakhtenbrot and M. Hausmann.....	688-695
<b>Quantitative and sensitive live-cell imaging with FIDSAM (fluorescence intensity decay shape analysis microscopy) for biomaterials research</b> F. Schleifenbaum, A.-K. Born, S. Peter and K. Maniura-Weber.....	696-704
<b>Fluorescence Deconvolution Microscopy and cellular modeling to understand heart repair after ventricular unloading</b> Roger J. Bick, Brian J. Poindexter, Stephanie T. Bates, Courtney J. Gemmato, O. H. Frazier and Pippa M. Evans.....	705-709
<b>Quantum dots in microscopy and cytometry: immunostaining applications</b> N. Barteneva and I. Vorobjev.....	710-721
<b>Nanofabricated DNA Curtains for High-throughput Single-Molecule Imaging of Protein-DNA Interactions</b> H. N. Wolcott, B. Alcott, L. Kaplan and E. C. Greene.....	722-732
<b>The adapted “single-section” Golgi method and the DiI fluorescent dye in microscopy for describing neuronal and glial morphology in different species</b> Alberto A. Rasia-Filho, Aline Dall’Oglio, Francine Dalpian, Liliam Midori Ide, Janaina Brusco and Jorge E. Moreira.....	733-736
<b>Single molecule fluorescence imaging of receptor interactions in mammalian cell signalling</b> David T. Clarke, Daniel Rolfe, Stephen E.D. Webb, Martyn Winn and Marisa L. Martin-Fernandez.....	737-746
<b>Bimolecular fluorescence complementation (BiFC) to investigate composition and cellular localization of homo- and heterodimeric transmembrane receptors and intracellular signalling pathways</b> T. Förg, L. Ponce, A. Tomsche, A. Holloschi, A. Lux and M. Hafner.....	747-755
<b>Use of fluorescence photobleaching techniques to measure the kinetics of intracellular transport</b> R.G. Davies, D.A. Jans and K.M. Wagstaff.....	756-763
<b>Live-Cell Fluorescent Imaging of Membrane or Mitochondrion Transfer between Connected Cells in Culture</b> A. Cselenyák, E. Pankotai, A. Csordás, L. Kiss and Z. Lacza.....	764-771
<b>Analysis of Molecular Mobility by Fluorescence Recovery After Photobleaching in Living Cells</b> C. Klein and F. Waharte.....	772-783

---

## VOL. 2

<b>Introduction.....</b>	XXV
<b>Serial sectioning of teeth and microscopy in cariology research</b> Anahita Jablonski-Momeni and Vitus Stachniss.....	785-791
<b>Investigating morphological structures of Culicoides from obsoletus complex by using Scanning Electron Microscopy and Composed Optical Microscopy</b> G. Alexandre-Pires, D. Ramilo, S. Diaz, J. Meireles, F. Boinas and I. Pereira da Fonseca...	792-802
<b>Application of microscopic techniques for the authentication of herbal medicines</b> Zhongzhen Zhao.....	803-812
<b>A computer-aided light microscopy system for three-dimensional reconstruction of axonal projections</b> Izumi Sugihara and Hirofumi Fujita.....	813-819
<b>A link between Light Microscopy (2D) and Scanning Electron Microscopy (3D) in the study of tumor vascular networks in hamster cheek pouch</b> L.B.O de Oliveira, V.F. Bampi, C.F. Gomes, L.A.X. Cruz and M.A.L. de Souza.....	820-827
<b>Digital Image Subtraction, Blue Filter, Enhancement (DISBE): A new approach for quantitative immunohistochemical analysis in light microscopy</b> V. Bernardo, M. Farina, L. Silva and U. Lins.....	828-835
<b>Microscopy and image analysis of individual and group cell shape changes during apoptosis</b> Mark A. DeCoster, Sowgandhi Maddi, Vivek Dutta and James McNamara.....	836-843
<b>Correlation of light and electron microscopy for immunogold staining. GFP immunogold, tool in biological research</b> C. Alfaro-Cervello, M. Soriano-Navarro, U. Gomez-Pinedo and J. M. García-Verdugo.....	844-850
<b>Anatomy of tomato fruit and fruit pedicel during fruit development</b> D. Rančić, S. Pekić Quarrie and I. Pećinar.....	851-861
<b>Microscopic determination of malaria parasite load: role of image analysis</b> John Frean.....	862-866
<b>Microscopic structure of the retina and vasculature in the human eye</b> D-Y. Yu, P. K. Yu, C. Balaratnasingam, S. J. Cringle and E-N. Su.....	867-875
<b>Exploring in vitro angiogenesis by image analysis and mathematical modeling</b> D. Guidolin, G. Albertin and D. Ribatti.....	876-884

<b>Imaging of angiogenesis: past, present and future</b> R. W. Cole, F. Liu and B. J. Herron.....	885-896
<b>Wavelet based texture classification of oral histopathological sections</b> M Muthu Rama Krishnan, Chandan Chakraborty and Ajoy Kumar Ray.....	897-906
<b>Tissue sectioning for epifluorescence microscopy</b> Maria N. Nguyen, Brenton Cavanagh, Tavia Davenport, Anwar Norazit and Adrian C. B. Meedeniya.....	907-913
<b>Functional histology of the retina</b> F. Germain, C. Pérez-Rico, J. Vicente and P. de la Villa.....	914-925
<b>Stereological tools for quantitative microscopy of the aortic wall with focus on the abdominal aortic aneurysm</b> Z. Tonar, K. Witter, V. Křížková, L. Eberlová, J. Kočová, J. Moláček, K. Houdek, P. Kochová, J. Vrzalová, O. Topolčan and V. Třeška.....	926-935
<b>Ultrastructural investigation of the sexual reproduction of some members of the black coral: A review</b> E. Gaino & F. Scoccia.....	936-945
<b>Microscopy features of mice cancer models induced by tumor cell transplantation and chemical agents</b> M. L. B. Carneiro, G. A. Joanitti, J. P. F. Longo, R. C. A. Peixoto and S. N. Bao.....	946-952
<b>Tissue fixation – the most underestimated methodical feature of immunohistochemistry</b> Wilfried Meyer and Isabelle Nina Hornickel.....	953-959
<b>Lacunarity: a complementary research tool on bone biology</b> G.D. Rabelo, C.C.G. Moura, M.E. Beletti and P. Dechichi.....	960-964
<b>Digital microscopy – the upcoming revolution in histopathology teaching, diagnostics, research and quality assurance</b> Tibor Krenacs, Ivett Zsakovics, Tamas Micsik, Laszlo Fonyad, Sebestyen V. Varga, Levente Ficsor, Gabor Kiszler and Bela Molnar.....	965-977
<b>Laser Microdissection Microscopy and its Applications in Molecular Biology</b> Ahlam Mustafa, Ragai R Mitry and Alberto Quaglia.....	978-985
<b>Laser Microdissection applied to plants</b> R. T. Teixeira and Pereira, H.....	986-992
<b>Microscopic analysis of histological and immunohistochemical sections to differentiate normal, precancer and cancerous oral squamous epithelial tissues</b> Sanjit Mukherjee, Jay Gopal Ray and Keya Chaudhuri.....	993-1000

<b>Microscopy as a tool in toxicological evaluations</b> C.S. Fontanetti, C.A. Christofoletti, T.G. Pinheiro, T.S. Souza and J. Pedro-Escher.....	1001-1007
<b>Mass Microscope for MALDI molecular Imaging in Biological Tissue Sections</b> Kamlesh Shrivastava, Takahiro Hayasaka and Mitsutoshi Setou.....	1008-1016
<b>Cell death. A comprehensive approximation. Necrosis</b> A. Alvarez, J. Lacalle, M. L. Cañavate, D. Alonso-Alconada, I. Lara-Celador, F. J. Alvarez and E. Hilario.....	1017-1024
<b>Cell death. A comprehensive approximation. Delayed cell death</b> E. Hilario, M. L. Cañavate, J. Lacalle, D. Alonso-Alconada, I. Lara-Celador, L. Alvarez-Granda and A. Alvarez.....	1025-1032
<b>Quality assessments of untreated and washed Quinoa (<i>Chenopodium quinoa</i>) seeds based on histological and foaming capacity investigations</b> L.W.D. van Raamsdonk, V. Pinckaers, J. Ossenkoppele, R. Houben, M. Lotgering and M. J. Groot.....	1033-1038
<b>Trace element of bovine placenta: histological analysis and distribution maps using <math>\mu</math>SXRF</b> S. E.A. Will, R.E. Rici, M. A. Miglino and A. Antunes.....	1039-1046
<b>The histological analysis of eyeballs of the striped owl <i>Rhinoptynx clamator</i></b> Jezler, P. C. O. C.; Braga, M. B. P.; Perlman, E.; Squarzone, R.; Borella, M. I.; Barros, P. S. M. and Antunes, A. ....	1047-1054
<b>Digital holographic microscopy – innovative and non-destructive analysis of living cells</b> Z. El-Schish, Mölder A, Sebesta M, Gisselsson L, Alm K and Gjörlöf Wingren A.....	1055-1062
<b>Cell motility studies using digital holographic microscopy</b> Johan Persson, Anna Mölder, Sven-Göran Pettersson and Kersti Alm.....	1063-1072
<b>Production of HPV16 L1L2 VLPs in cultures of human epithelial cells</b> Aurora Marques Cianciarullo, Vivian Szulcowski, Agtha de Alencar Muniz Chaves, Silvia Boschi Bazan, Karina Araújo Aires, Martin Müller, Edécio Armbruster-Moraes.....	1073-1082
<b>CMEIAS digital microscopy and quantitative image analysis of microorganisms</b> Frank B. Dazzo.....	1083-1090
<b>Microscopic techniques to study cytoskeletal dynamics in neurons</b> Carsten Theiss and Karl Meller.....	1091-1099
<b>Microscopy methods for morpho-functional characterisation of marine invertebrate haemocytes</b> F. Cima.....	1100-1107

<b>Microscopy techniques to analyse plant-pathogen interactions: <i>Fusarium graminearum</i> as pathogen of wheat</b> Teresa M. Alconada Magliano, and Gisele E. Kikot.....	1108-1114
<b>Assessment of antimicrobial compounds by microscopy techniques</b> M. Torrent, A. Sánchez-Chardi, M.V. Nogués and E. Boix.....	1115-1126
<b>Microscopic techniques for application in experimental pathology of the middle and inner ear</b> A. Trinidad, J.R. García-Berrocal, J. Nevado and R. Ramírez-Camacho.....	1127-1134
<b>Traditional and new microscopy techniques applied to the study of microscopic fungi included in amber</b> M. Speranza, J. Wierzchos <sup>1</sup> , J. Alonso, L. Bettucci, A. Martín-González, and C. Ascaso....	1135-1145
<b>The benefits of microfluidics for imaging cell migration</b> L.L. Soon, F. Braet, K.R. Ratinac, M. Schuliga, H.-Y. Chien and A. Stewart.....	1146-1154
<b>Relevance of light, fluorescence and transmission electron microscopy techniques to differential diagnoses of kidney allograft rejection</b> Faleiros ACG, Aguiar CF, Breda LCD, Machado JR, Llaguno MM, Abate DTRS, Rodrigues MLP and Reis MA. ....	1155-1160
<b>A microscopic in vitro study of neutrophil diapedesis across the blood-brain barrier</b> M. von Wedel-Parlow and H.-J. Galla.....	1161-1167
<b>Biophotonic Application on Parasite-Vector Interaction</b> D. Feder, C. L. Cesar and S.A.O. Gomes.....	1168-1176
<b>The self-organising imperative: The adaptive learning potential of virtual microscopy</b> Terrence S. Maybury and Camile S. Farah.....	1177-1184
<b>Microscopy of myelination</b> J. E. McGregor, Z. Wang, C. ffrench-Constant and A. M. Donald.....	1185-1195
<b>The Microscopy as Tool of Study for the Adherent Umbilical Cord Blood Stem Cells</b> Lorena Favaro Pavon, Tatiana Thais Sibov, Luciana Cavalheiro Marti, Daniela Mara de Oliveira, Maria Izabel Camargo Mathias, Edson Amaro Junior and Lionel Fernel Gamarra	1196-1205
<b>Triple fecal test: A novel stool collection procedure for enhanced microscopic detection of enteric parasites.: First trial among parasite burden population in Kolkata</b> Avik Kumar Mukherjee, Punam Chowdhury, Mihir K Bhattacharya, Tom Van Gool, Tomoyoshi Nozaki and Sandipan Ganguly.....	1206-1208

## Techniques

<b>Methodology of composite polymers/metal interface characterization by adapted EDX profiling in a pressure controlled SEM</b> C. Arnoult, C. Sperandio, A. Laachachi, D. Ruch and J. Di Martino.....	1211-1218
<b>Electron microscopy techniques applied to materials for energy storage and conversion</b> Douglas G. Ivey.....	1219-1231
<b>TEM specimen preparation techniques</b> D. V. Sridhara Rao, K. Muraleedharan and C. J. Humphreys.....	1232-1244
<b>Topicality of TEM in experimental nephrotoxicity</b> A. Stacchiotti, A. Lavazza, L.F. Rodella and R. Rezzani.....	1245-1250
<b>Wavelet analysis of images from scanning probe and electron microscopy</b> A. Palazoglu, P. Stroeve and J. A. Romagnoli.....	1251-1262
<b>Comparative study of transmission electron microscopy (TEM), scanning electron microscopy (SEM), and atomic force microscopy (AFM) of nano scale particles embedded in a solid matrix</b> E. Nembach, I. Sobchenko, D. Baither and R. Reichelt.....	1263-1272
<b>Electron microbeam changes under gaseous environment: CP-SEM case and microanalysis limits</b> L. Khouchaf, C. Mathieu and Kadoun.....	1273-1279
<b>Compact mobilized and low-cost scanning tunneling microscope for educational use</b> Eli Flaxer.....	1280-1286
<b>Atomic Force Microscope, a new tool for cytogenetic studies</b> S. Di Bucchianico and A. Poma.....	1287-1292
<b>Chemical modification of scanning tunneling microscopy tips for identification of functional groups in self-assembled monolayers</b> C. Volcke.....	1293-1301
<b>Scanning Probe Microscopy</b> Lydia Alvarez and J. M. Siqueiros.....	1302-1309
<b>Development of specific cantilevers for use with high-frequency MFM</b> M. R. Koblishka and U. Hartmann.....	1310-1318

<b>Hollow-cone dark-field transmission electron microscopy for grain size and dislocation-density quantification of nanocrystalline materials</b> B. Yao, H. Heinrich, K. Barmak, K. R. Coffey, Kyu Cho and Y.H. Sohn.....	1319-1326
<b>A Scanning Probe Microscopy experimental component designed for early graduate/postgraduates students</b> J. A. Watson, S. Myhra and G. S. Watson.....	1327-1337
<b>Introduction to Atomic Force Microscopy Simulation</b> E. F. Franca, A. M. Amarante and F. L. Leite.....	1338-1349
<b>Confocal microscopy: from fundamental optics to innovative applications</b> C. Saldaña, V. Morales-Tlalpan and V.M. Castaño.....	1350-1355
<b>Orthogonal-Plane Fluorescence Optical Sectioning: A technique for 3-D imaging of biomedical specimens</b> J. Buytaert, E. Descamps, D. Adriaens and J. Dirckx.....	1356-1365
<b>Spatial light modulators in fluorescence microscopy</b> Pavel Křížek and Guy M. Hagen.....	1366-1377
<b>Feature extraction, selection and classifier design in automated time-lapse fluorescence microscope image analysis</b> M. Wang.....	1378-1388
<b>Probe enhanced, nano-Raman spectroscopy (PERS); A sensitive technique for vibrational surface spectroscopy</b> P. G. Spizzirri.....	1389-1396
<b>Quantitative phase imaging with spectral-domain optical coherence phase microscopy</b> Jun Zhang and Zhongping Chen.....	1397-1402
<b>Deconvolution Multi-Contrast Light Profile Microscopy (MC-LPM)</b> J. F. Power.....	1403-1410
<b>Basic principles and applications of digital holographic microscopy</b> V. Micó, C. Ferreira, Z. Zalevsky and J. García.....	1411-1418
<b>Multi-view and multi-resolution real-time digital holographic microscopy</b> Tomoyoshi Shimobaba, Nobuyuki Masuda and Tomoyoshi Ito.....	1419-1425
<b>Linear versus Non Linear Super Resolved Microscopy</b> Aviram Gur, Dror Fixler, Vicente Micó, Javier García and Zeev Zalevsky.....	1426-1435
<b>Image processing for the optimization of dynamic range and ultra-high contrast amplification in photomicrography</b> J. Piper.....	1436-1444

<b>Microscopy Techniques for Immunolocalisation of Nitrated Proteins in Different Tissues</b> Serdar Doğan and Mutay Aslan.....	1445-1454
<b>Image analysis aided by Segmentation algorithms for techniques ranging from Scanning Probe Microscopy to Optical Microscopy</b> M. D'Acunto and O. Salvetti.....	1455-1466
<b>Learning across disciplines using virtual microscopy: new approaches</b> Rakesh K. Kumar and Gary M. Velan.....	1467-1473
<b>Instrumental development for obtaining extended depth of field images: study of the influence of the chromatic coordinates used as basis of the calculation</b> J. Navas, M. Kulawik, R. Alcántara, C. Fernández-Lorenzo and J. Martín-Calleja.....	1474-1482
<b>Different microscopy approach for solid surface characterization</b> P. Slepíčka, J. Siegel, Z. Kolská, V. Hnatowicz and V. Švorčík.....	1483-1494
<b>Challenges and recent advances in live cell bioimaging</b> Terence T.T.Tan, Clement Khaw and Mary M.L.Ng.....	1495-1505
<b>Thermal wave microscopy: fundamentals and applications</b> S. Galovic, Z. Soskic and D. M. Todorovic.....	1506-1515
<b>Microscopic image analysis using computer-assisted methodology to quantify immunostained receptors</b> C. Diniz.....	1516-1525
<b>The application of Object Based Image Analysis to Petrographic Micrographs</b> R. Marschallinger and P.Hofmann.....	1526-1532
<b>The ergonomics of microscope work</b> J. Sillanpää and M. Nyberg.....	1533-1538
<b>Stimulated Emission Depletion (STED) Microscopy: from Theory to Practice</b> Javad N. Farahani, Matthew J. Schibler and Laurent A. Bentolila.....	1539-1547
<b>Microscopy and forensic entomology</b> N. Ubero-Pascal, I. Arnaldos, R. López-Esclapez and M.D. García.....	1548-1556
<b>Correlative microscopy – seeing at different angles</b> N. Jahr, T. Schneider, C. Leiterer, A. Csaki and W. Fritzsche.....	1557-1564
<b>Microscopy Analysis by visual Comparison with simulated Images</b> S. Vongehr, S.C. Tang and X.K. Meng.....	1565-1571

<b>High resolution 3D analytic tomography of nano-objects</b> O. Ersen and C. Hirlimann.....	1572-1579
---	-----------

---

## VOL. 3

<b>Introduction.....</b>	XXV
--------------------------	-----

### **Applications in Physical/Chemical Sciences**

<b>Basic Principles and Application of Electron Channeling in a Scanning Electron Microscope for Dislocation Analysis</b> R. J. Kamaladasa and Y.N. Picard.....	1583-1590
<b>Bloch wave analysis of electron beam scattering mechanisms by a dopant atom</b> B.G. Mendis.....	1591-1599
<b>Near field emission scanning electron microscopy</b> T.L. Kirk.....	1600-1607
<b>Surface Electron Microscopy of Ga Droplet Dynamics on GaAs (001)</b> D. E. Jesson and W. X. Tang.....	1608-1619
<b>Microstructure and Coercivity Correlationship in Soft Magnetic Nanocrystalline Alloys</b> Juan José del Val and Julián González.....	1620-1629
<b>Atomic structures and properties of boron nitride nanomaterials</b> Takeo Oku.....	1630-1641
<b>Scanning electron microscopy of natural rubber surfaces: quantitative statistical and spectral texture analysis using digital image processing</b> D. K. Setua, R. Awasthi, S. Kumar, M. Prasad and K. Agarwal.....	1642-1652
<b>Microstructural characterization of lithium ion conductor by high resolution electron microscopy</b> T. Tsurui T. Katsumata and Y. Inaguma.....	1653-1661
<b>Analysis of Li-Ion Battery Materials by Electron Energy Loss Spectroscopy</b> F. Cosandey.....	1662-1666
<b>Study of Indium Tin Oxide Nanomaterials Obtained from Vapor Phase by Electron Microscopy</b> Marcelo Ornaghi Orlandi, Alexandre José Castro Lanfredi and Elson Longo.....	1667-1673

<b>FESEM and HRTEM studies of some novel carbon nanostructures</b> D. Banerjee, A. Jha and K. K. Chattopadhyay.....	1674-1680
<b>Analyzing growth kinetics of magmatic crystals by backscattered electron microscopy of oriented crystal sections</b> R. Sturm.....	1681-1689
<b>Determining the persistence length of biopolymers and rod-like macromolecular assemblies from electron microscope images and deriving some of their mechanical properties</b> Shlomo Trachtenberg and Ilan Hammel.....	1690-1695
<b>Microscopic studies of electron and ion irradiated polymeric films</b> Vaibhav Kulshrestha, Garima Agarwal, Kamendra Awasthi, Devendra Vyas and Y. K. Vijay.....	1696-1703
<b>FIB-based target preparations of complex material systems for advanced TEM investigations</b> U. Muehle, S. Jansen, L.Hillmann, H.-J. Engelmann and D. Rafaja.....	1704-1716
<b>Electron microscopy study of platinum nanoparticle catalysts supported on different carbon nanostructures for fuel cell applications</b> Lifeng Dong and Qianqian Liu.....	1717-1723
<b>Structural characterization of lipid-based colloidal dispersions using cryogenic transmission electron microscopy</b> Stanislav Rangelov, Denitsa Momekova and Mats Almgren.....	1724-1734
<b>Using TEM and SEM to unveil the role of nanoclays in polymer blends</b> M. F. Almeida, A.V. Machado and J. A. Covas.....	1735-1740
<b>"Rear window": looking at charged particles hitting a charged target in a FIB/SEM</b> Marziale Milani, Hassan N. Abdul-Wahab, Tariq H. Abbood, C. Savoia and F. Tatti.....	1741-1754
<b>Electron microscopy for understanding swift heavy ion irradiation effects on Electroactive polymers</b> A. Kumar, Somik Banerjee and M. Deka.....	1755-1768
<b>Uses of Scanning Electrochemical Microscopy in Corrosion Research</b> R. M. Souto, S. V. Lamaka and S. González.....	1769-1780
<b>Morphology Study by Using Scanning Electron Microscopy</b> Fei Liu, Junshu Wu, Kunfeng Chen and Dongfeng Xue.....	1781-1792
<b>Nano-scale Plasma Etching-Hydrophilisation of Keratin fibres</b> W.Y.I. Tsoi, C.W. Kan, C.W.M. Yuen and T.B.Tang.....	1793-1799

<b>Focused ion beam sample preparation for atom probe tomography</b> W.R. McKenzie, E.A. Marquis and P.R. Munroe.....	1800-1810
<b>HRTEM Study of Oxide Nanoparticles in Fe-16Cr ODS Ferritic Steel Developed for Fusion Energy</b> Luke L. Hsiung.....	1811-1819
<b>Structural determination of Zn-O dumbbells in faceted nano-particles</b> A.K. Srivastava, R. Gakhar, P. Dua, K. Senthil, J.S.Tawale, K.N. Sood and K. Yong.....	1820-1823
<b>Use of electron backscattering coefficients for identification of Be-bearing Phases</b> F. Zupanič, T. Bončina and B. Markoli.....	1824-1829
<b>Analytical electron microscopy of gold nanoparticles on ceria, titania and ceria-titania materials</b> Sónia A. C. Carabineiro, Adrián M.T. Silva, Goran Dražić and José L. Figueiredo.....	1830-1837
<b>Microscopy analysis of damaged aeronautical components</b> J.M. Silva, V. Infante, M. de Freitas and L. Reis.....	1838-1845
<b>Low-Voltage Aberration-Corrected Transmission Electron Microscopy: Progressing Carbon Nanostructures</b> F. Börrnert, A. Bachmatiuk, B. Büchner and M. H. Rummeli.....	1846-1852
<b>TEM investigations of icosahedral quasicrystal in Al-based alloys</b> B. Markoli, T. Bončina and F. Zupanič.....	1853-1859
<b>SEM Analysis of CO<sub>2</sub> Laser Treated Cotton Grey Fabric</b> Y. L. Chow, C. K. Chan and C. W. Kan.....	1860-1867
<b>Microscopic investigations of Synthetic Biomimetic Hydroxyapatite</b> N. Roveri, E. Foresti, M. Lelli, I. G. Lesci and M. Marchetti.....	1868-1879
<b>Morphology and surface properties of natural fiber treated with electron beam</b> Seong Ok Han and Hae Young Choi.....	1880-1887
<b>Using Transmission Electron Microscopy (TEM) for Chemical Analysis of Semiconductors</b> G.F. Iriarte.....	1888-1896
<b>Partially Coherent Image Formation Theory for X-ray Microscopy</b> Chang Chang and Takashi Nakamura.....	1897-1904
<b>Surface Characterization of Carbon Materials by X-ray Photoelectron Spectroscopy</b> Soo-Jin Park and Ki-Seok Kim.....	1905-1916

<b>Application of white beam synchrotron radiation X-ray topography for in-situ study of ferroelectric domain structure</b> J. Xiao.....	1917-1924
<b>Exploring the Properties and Interactions of Supported Lipid Bilayers on the Nanoscale by Atomic Force Microscopy</b> S. Morandat and K. El Kirat.....	1925-1939
<b>AFM study of the nanostructure of quenched isotactic polypropylene</b> Q. Zia, H.-J. Radusch and R. Androsch.....	1940-1950
<b>Crystallographic image processing for scanning probe microscopy</b> P. Moeck.....	1951-1962
<b>Measuring dielectric properties at the nanoscale using Electrostatic Force Microscopy</b> R. Arinero, C. Riedel, G. A. Schwartz, G. Lévêque, A. Alegría, Ph. Tordjeman, N. E. Israeloff, M. Ramonda and J. Colmenero.....	1963-1977
<b>Estimation of percolation threshold of acid-etched titanium surfaces using Minkowski functionals</b> M.A. Rodríguez-Valverde, P.J. Ramón-Torregrosa and M.A. Cabrerizo-Vílchez.....	1978-1983
<b>Combined use of AFM and FTIR in the analysis of the hydrogen termination of Si(100) surfaces</b> E. Romano, S. Trabattoni, M. Campione, E. Merati, A. Sassella and D. Narducci.....	1984-1992
<b>Electrosynthesis and Characterization of Semiconducting Molecular Materials in the Electrochemical Module of the Atomic Force Microscope</b> M. E. Sánchez-Vergara, V. García-Montalvo, A. Moreno and J. R. Alvarez-Bada.....	1993-2000
<b>Magnetization Controlling of Magnetic Probes in Spin-Polarized Scanning Tunneling Microscopy</b> Pin-Jui Hsu and Minn-Tsong Lin.....	2001-2012
<b>Evaluation of nanomechanical properties of surfaces</b> Miyake S and Wang M.....	2013-2021
<b>Characterization of MgO barrier by conducting atomic force microscopy</b> K. M. Bhutta.....	2022-2027
<b>Applying an atomic force microscopy in the study of mineral flotation</b> Jinhong Zhang and Wei Zhang.....	2028-2034
<b>A study on the surface roughness of electrodeposited silver thin films using a confocal laser scanning microscope</b> M. Saitou.....	2035-2042

<b>Confocal Raman mapping study of a single nanowire</b> Sheng Yun Wu.....	2043-2049
<b>Multidimensional Live Cell Imaging of Cancer-Mediated Events</b> Yingying Su, Renee Whan, Christophe Empsen, Lilian Soon and Filip Braet.....	2050-2061
<b>Microscale chemical imaging using vibrational spectroscopy methods</b> Peter Wilhelm and Boril S. Chernev.....	2062-2071
<b>Fluorescence anisotropy imaging microscopy</b> Lan Yao, James Segala, Anthony J. Bucci, Gregory O. Andreev, Yana K. Reshetnyak and Oleg A. Andreev.....	2072-2078
<b>Spectral unmixing of multiply stained fluorescence samples</b> T. Pengo, A. Muñoz-Barrutía and C. Ortiz-de-Solórzano.....	2079-2087
<b>Epifluorescence light microscopy as a promising technique for studying the microstructure of wheat dough</b> S.H. Peighambaroust and M.R. Dadpour.....	2088-2095
<b>Fluorescence immunohistochemistry in combination with DIC and transmission images of confocal LSM for studies of semi-ultrathin specimens of epoxy resin-embedded samples</b> S. Iwasaki and H. Aoyagi.....	2096-2102
<b>Thermal and optical nanolithography using a scanning near-field optical microscopy</b> Eli Flaxer, Matvey Klebanov, Victor Lyubin, Michael Manevich and Salman Noach.....	2103-2110
<b>Laser capture microdissection from formaldehyde-fixated and demineralized paraffin embedded tissues</b> T. Kaneko, M.M.R. Cordeiro, T. Okiji, R. Kaneko, H. Suda and J.E. Nör.....	2111-2116
<b>Holographic methods for phase microscopic objects study</b> Tishko T. V., Tishko D. N. and Titar V. P.....	2117-2128
<b>Time-Resolved Luminescence Microscopy and Microarray Using Europium Chelate Labels</b> K. Matsumoto.....	2129-2136
<b>Investigations of distributions of point defect clusters in lopezite crystals by etch topography</b> M. Szurgot.....	2137-2144
<b>The importance of microscopic analysis for accurate interpretation of chemical-induced cytotoxicity</b> M.J. Hazen, P. Fernández Freire, J.M. Pérez Martín, A. Peropadre, O. Herrero, L. Carvajal López and V. Labrador.....	2145-2153

<b>Microscopy techniques to evaluate plasma modification on membranes for sterilization applications</b>	
C. Canal, S. Villeger, A. Ricard, A. Navarro, J.M. Canal.....	2154-2161
<b>In-situ visualization of local corrosion by Scanning Ion-selective Electrode Technique (SIET)</b>	
SvetlanaV. Lamaka, Ricardo M. Souto and Mário G. S. Ferreira.....	2162-2173
<b>Microscopic evaluation of diatomite for advanced applications: Case study</b>	
A.Q.Selim, A.A.El-Midany and S.S.Ibrahim.....	2174-2181
<b>Microscopy and computerized image analysis of wood pulp fibres multi-scale structures</b>	
Gary Chinga-Carrasco.....	2182-2189
<b>Surface nanofabrication using focused ion beam</b>	
Nan Yao and Alexander K Epstein.....	2190-2199