

[table of contents preview](#)

INTRODUCTION TO EMAS SPECIAL ISSUE

Electron Probe Micro-Analysis of Materials Today. Rare and Noble elements: From Ore Deposits to High-Tech Materials

Romano Rinaldi and Federica Zaccarini

EMAS SPECIAL ISSUE

Electron Probe Microanalysis: A Review of the Past, Present, and Future

Romano Rinaldi and Xavier Llovet

Electron Microprobe and Raman Spectroscopy Investigation of an Oxygen-Bearing Pt-Fe-Pd-Ni-Cu Compound from Nurali Chromitite (Southern Urals, Russia)

Federica Zaccarini, Giorgio Garuti, Ronald J. Bakker, and Evgeny Pushkarev

Efficient and Accurate Identification of Platinum-Group Minerals by a Combination of Mineral Liberation and Electron Probe Microanalysis with a New Approach to the Offline Overlap Correction of Platinum-Group Element Concentrations

Inga Osbahr, Joachim Krause, Kai Bachmann, and Jens Gutzmer

Electron Probe Microanalysis of REE in Eudialyte Group Minerals: Challenges and Solutions

Petya Atanasova, Joachim Krause, Robert Möckel, Inga Osbahr, and Jens Gutzmer

Age Dating from Electron Microprobe Analyses of U, Th, and Pb: Geological Advantages and Analytical Difficulties

John F.W. Bowles

Diagenetic Evolution and Reservoir Quality of Sandstones in the North Alpine Foreland Basin: A Microscale Approach

Doris Gross, Marie-Louise Grundtner, David Misch, Martin Riedl, Reinhard F. Sachsenhofer, and Lorenz Scheuchter

Quantitative Microanalysis of (1-x)Pb(Mg_{1/3}Nb_{2/3})O₃ × xPbTiO₃ (PMNT) Ferroelectric Ceramics

Zoran Samardžija

Nonlinear Lock-In Infrared Microscopy: A Complementary Investigation Technique for the Analysis of Functional Electroceramic Components

Michael Hofstätter, Nadine Raidl, Bernhard Sartory, and Peter Supancic

Copper Refinement from Anode to Cathode and then to Wire Rod: Effects of Impurities on Recrystallization Kinetics and Wire Ductility

Anne-Laure Helbert, Alice Moya, Tomas Jil, Michel Andrieux, Michel Ignat, François Brisset, and Thierry Baudin

Metals in Human Gall, Bladder, and Kidney Stones Based on an Electron Microprobe Investigation

Reinhard Moser, Federica Zaccarini, Waltraud Moser, Rudolf Schrittwieser, and Reinhold Kerbl

EQUIPMENT AND SOFTWARE DEVELOPMENT

Diluvian Clustering: A Fast, Effective Algorithm for Clustering Compositional and Other Data

Nicholas W. M. Ritchie

An Efficient and Cost-Effective Method for Preparing Transmission Electron Microscopy Samples from Powders

Haiming Wen, Yaojun Lin, David N. Seidman, Julie M. Schoenung, Isabella J. van Rooyen, and Enrique J. Lavernia

Analyzing the Effect of Capillary Force on Vibrational Performance of the Cantilever of an Atomic Force Microscope in Tapping Mode with Double Piezoelectric Layers in an Air Environment

Amir Nahavandi and Moharam H. Korayem

Gravitational-Like Lens Based on Graphene Ripple

Daqing Liu, Shuyue Chen, Ning Ma, Xiang Zhao, and Zhuo Xu

A Compact "Water Window" Microscope with 60 nm Spatial Resolution for Applications in Biology and Nanotechnology

Przemyslaw Wachulak, Alfio Torrisi, Muhammad F. Nawaz, Andrzej Bartnik, Daniel Adjei, Šárka Vondrová, Jana Turňová, Alexandr Jančárek, Jiří Limpouch, Miroslava Vrbová, and Henryk Fiedorowicz

BIOLOGICAL APPLICATIONS

Robot-Guided Atomic Force Microscopy for Mechano-Visual Phenotyping of Cancer Specimens

Wenjin Chen, Zachary Brandes, Rajarshi Roy, Marina Chekmareva, Hardik J. Pandya, Jaydev P. Desai, and David J. Foran

Ultrastructural Analysis of *in Vivo* Hypoglycemic Effect of Two Polyoxometalates in Rats with Streptozotocin-Induced Diabetes

Štefana Bálci, Modeste Wanke-Nya, Dan Rusu, Gheorghe Zsolt Nicula, Mariana Rusu, Adrian Florea, Horea Matei

Comparative Assessment of Oral Mesenchymal Stem Cells Isolated from Healthy and Diseased Tissues

Emőke Páll, Adrian Florea, Olga Sorîţău, Mihai Cenariu, Adrian S. Petruţiu, and Alexandra Roman

Scanning Electron Microscopy Evaluation of Dental Root Resorption Associated With Granuloma

Manila Chieruzzi, Stefano Pagano, Carlo De Carolis, Stefano Eramo, and José M. Kenny

Nanolakeage in the HL and Acid-base Resistant Zone at the Adhesive Dentin Interface

Toru Nikaïdo, Hamid Nurrohmah, Tomohiro Takagaki, Alireza Sadr, Shizuko Ichinose and Junji Tagami

Organic Residues on Unavailable Specimens: An Evaluation of the Use of Synthetic Replicas for SEM Identification of Bloodstains (with Emphasis on Archeological and Ethnographic Artifacts)

Policarp Hortolá

Absorption and Phase Contrast X-Ray Imaging in Paleontology Using Laboratory and Synchrotron Sources

Pidassa Bidola, Marco Stockmar, Klaus Achterhold, Franz Pfeiffer, Mirian L.A.F. Pacheco, Carmen Soriano, Felix Beckmann, and Julia Herzen

Contribution of Light and Electron Microscopy to Identification of Bark from *Frangula azorica*, an Azorean Medicinal Plant

Maryam Malmir, Cátia Curica, Elsa T. Gomes, Rita Serrano, and Olga Silva

Structural Insight into Cell Wall Architecture of *Micanthus sinensis* cv. using Correlative Microscopy Approaches

Jianfeng Ma, Xunli Lv, Shumin Yang, Genlin Tian, and Xing'e Liu

Microscopy Characterization of Silica-Rich Agrowastes to be used in Cement Binders: Bamboo and Sugarcane Leaves

Josefa Roselló, Lourdes Soriano, M. Pilar Santamarina, Jorge L. Akasaki, José Luiz P. Melges, and Jordi Payá

MATERIALS APPLICATIONS

Quantitative Electron-Excited X-Ray Microanalysis of Borides, Carbides, Nitrides, Oxides, and Fluorides with Scanning Electron Microscopy/Silicon Drift Detector Energy-Dispersive Spectrometry (SEM/SDD-EDS) and NIST DTSA-II

Dale E. Newbury and Nicholas W. M. Ritchie

Numerous Iron-Rich Particles Lie on the Surface of Erionite Fibers from Rome (Oregon, USA) and Karlik (Cappadocia, Turkey)

Alessandro Croce, Mario Allegrina, Caterina Rinaudo, Giovanni Gaudino, Haining Yang, and Michele Carbone

Interferometric Diffraction from Amorphous Double Films

Aram Rezikyan, James A. Belcourt, and Michael M. J. Treacy

μ CT-Based Analysis of the Solid Phase in Foams: Cell Wall Corrugation and other Microscopic Features

Samuel Pardo-Alonso, Eusebio Solórzano, Jerome Vicente, Loes Brabant, Manuel L. Dierick, Ingo Manke, Andr Hilger, Ester Laguna, and Miguel Angel Rodriguez-Perez

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Dear Abbe

Dear Abbe,

I have an odd problem. I am studying predator-prey interactions between free-living amoebae and their prey microzoans, but it appears that how I look at the culture dishes affects my results (this seems disturbingly quantum). If I use differential-interference contrast, the amoebae successfully "stalk" and capture their prey, but if I use amoebae that express GFP, then the prey micro-critters seem to detect them and flee. Nothing else is different. What could be going on?

Baffled in Bismarck

Dear Baffled,

I sympathize with you. I also have many odd problems. Most can be solved with a good Schnapps or just avoiding the relatives, though. Your problem is different, but really, the answer is right under your nose. I am sorry to say you do not have a Nobel Prize coming for your discovery of a new, biological quantum mechanical effect. Instead, you have obviously forgotten that many micro-critters have photoreceptors—eyespots, sometimes even almost eyes. When you are watching your GFP-labeled amoebae, the prey critters can clearly see the glowing amoebae approaching and run away. I know I do when I see large, glowing masses approaching me. Usually after the Schnapps. The answer really is simple: quit using GFP and use CamFP, camouflage fluorescent protein. Keep in mind that there is ambient light in the natural environment of both your amoeboid predators and their prey. By using GFP, you make the amoebae stand out to any prey with micro-eyes. If you instead use CamFP, the amoebae will blend in with their surroundings and once again be able to "stalk" their prey, although, ja, there will be certain difficulties imaging them. I'm surprised you haven't heard of CamFP. Many people doing confocal and multiphoton microscopy are using it. At least, I hope they are, given the claims made about the images they present.

If you are stumped and need a new paradigm, contact Herr Abbe for random thoughts about your problem. Contact is made through his faithful assistant at jpsshield@uga.edu.

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