

(E)MSA Early Tutorials

Video Quality

The technical quality of the Videos varies greatly, ranging from slick, professional productions to live lectures, not intended for taping, and recorded with inadequate equipment and lighting. MSA has initiated procedures to improve the quality of future acquisitions, especially of the tutorials, and to replace some of the older ones.

Organization

Titles are numbered serially, in order of acquisition. Unless denoted specifically by a "B&W", All are in color

Background

MSA, through its Education Committee, has gathered, produced, and distributed videos on electron microscopy and related topics since 1976. Since 1982, most new acquisitions have been tutorial lectures at MSA Annual Meetings.

Presentations of special interest (internationally prominent scientists) highlighted in yellow

- #1 The Transmission Electron Microscope 29 minutes/ B&W 1982
Presented by Zeiss
- #2 Using the LKB Knifemaker 17 minutes/color
Presented by Anon.
- #3 Mikros Vacuum Evaporator 37 minutes
Presented by EM Lab Berkeley
- #4 Using the Wescor 5100 Osmometer 13 minutes/color
Presented by EM Lab Berkeley
- #5 Electron Micrography 12 minutes/ B&W
Presented by Gambill
- #6 Sectioned Biological Material 16 minutes/color
Presented by Anon
- #7 The Penetrating Eye 22 minutes/color 1970
Presented by Hayes
- #8 Introduction to SEM 57 minutes/color 1982
Presented by Hayes
- #9 Critical Point Drying 22 minutes
Presented by Humphries
- #10 Particulate Sample Preparation 25 minutes/color
Presented by Berkeley EM Lab
- #11 High Resolution Surface Replication 33 minutes/ B&W
Presented by Berkeley EM Lab
- #14 The Kleinschmidt Technique 22 minutes/color
Presented by Hebert
- #15 Glycol Methacrylate Embedding for Light Microscopy 60 minutes/color
Presented by Moe

- #16 Interpreting TEM's Three Dimensionally 6 minutes/B&W
Presented by Pederson
- #17 Introduction to Freeze-Fracture 77 minutes/color
Presented by Schooley
- #19 Weak-Beam EM 47 minutes/color
Presented by VanderSande
- #20 A lecture on Electron Channeling 47 minutes/color
Presented by Davidson
- #21 Preparation of Macromolecules for TEM 47minutes/color
Presented by Slayter
- #22 Preparation of Support Films for TEM 14 minutes/color
Presented by Pechak
- #23 Basic Optics in SEM 40 minutes/ color
Presented by Crang
- #24 Biological Procedures in EM 41 minutes/ B&W
Presented by Crang
- #26 Electron Microscopy. Principles and Practice 153 minutes/ B&W
Presented by Crang
- #27 Operation of the JEOL 100C/CX TEM 75 minutes
Presented by Cummings
- #28 Stereology 52 minutes/color
Presented by Scales
- #29 JEOL JSM-35 SEM Part I 36 minutes/color
Presented by Thurston
- #30 JEOL JSM-35 SEM Part II 35 minutes/color
Presented by Thurston
- #31 Fine Tuning Your SEM 56 minutes/color
Presented by Gaugler
- #34 Theory of HVEM II 58 minutes/ B&W
Presented by Humphreys
- #35 Theory of HVEM III 40 minutes/ B&W
Presented by Humphreys
- #36 Theory of HVEM IV 57 minutes/ B&W
Presented by Humphreys
- #37 Kinetic Studies I 57 minutes/ B&W 1882
Presented by Loretto
- #38 Kinetic Studies II 44 minutes/ B&W
Presented by Loretto
- #39 Kinetic Studies III 74 minutes/ B&W
Presented by Westmacott
- #40 Gas-Solid Interactions
Presented by Kenik
- #41 Radiation Damage I 96 minutes/ B&W
Presented by Kiritani
- #42 Radiation Damage III 50 minutes/ B&W

- Presented by Merkle
- #44 Radiation Damage IV 22 minutes/ B&W
Presented by King
- #45 Introduction to Ultramicrotomy 36 minutes/color
Presented by Schooley
- #46 Colloidal Gold Labeling 112 minutes 1983
Presented by DeMee
- #48 Glass & Ceramics; Ion Milling 90 minutes/color
Presented by Howitt
- #53 Basics of STEM 50 minutes/color
Presented by VanderSande:
- #54 How to Read a Convergent Beam Pattern 55 minutes/color
Presented by Eades
- #55 Energy Dispersive X-Ray Spectroscopy 52 minutes/color
Presented by Hall
- #57 High Resolution EM 55 minutes/ color
Presented by Gibson
- #58 EELS in Biology 52 minutes/color
Presented by Ottensmeyer
- #59 Additives in Biological Fixation 76 minutes/color
Presented by Boyles
- #60 Rapid Freezing of Biological Specimens
Presented by Costello
- #61 Cryoultramicrotomy 54 minutes/ color
Presented by Hagler
- #62 Image Recording and processing 30 minutes/color
Presented by Krakow
- #63 HVEM for Biologists 50 minutes -- DEFECTIVE
Presented by Gronsky
- #67 Low Dose Imaging 63 minutes/color
Presented by Downing
- #71 Specimen Preparation for Near Surface Examination 48 minutes/color
Presented by Horton
- #72 Immunocytochemical Localization 49 minutes/color
Presented by Pickel
- #73 Energy Dispersive X-Ray Analysis 90 minutes/color
Presented by Fiori
- #74 Balzers 301 Freeze-Fracture Apparatus 55 minutes/color
Presented by Rash
- #76 Ultrarapid Propane Jet Freezing 120 minutes
Presented by Gilkey
- #77 Biological Applications of Cryo-SEM 57 minutes/color
Presented by Sargent
- #79 Post-Shadow Labeling 40 minutes
Presented by Dinduk
- #83 X-Ray Microanalysis 60 minutes/color

- Presented by Fiori
- #84 LaB6 in the TEM
Presented by Sewell
 - #87 High Resolution SEM
Presented by Peters
 - #90 CBED Total of 3 tapes 280 minutes
Presented by Eades
 - #91 CBED Approx. 300 minutes
Presented by Steeds
 - #92 CBED Approx. 280 minutes
Presented by Spence
 - #93 CBED
Presented by Bird
 - #94 Nuclear Microprobe Analysis 62 minutes/color
Presented by Doyle
 - #98 Development of Beam-forming System 27 minutes/color
Presented by Mulvey
 - #103 Microanalysis B.C.31 minutes/color
Presented by Heidenreich
 - #105 Basic Optics in TEM
Presented by McConville:
 - #106 Electron Scattering \$10.00
Presented by VanderSande
 - #107 Contrast Mechanisms in TEM 57 minutes/color
Presented by Hren
 - #109 Care and Use of Diamond Knives 56 minutes/color
Presented by Bell
 - #110 EM of Nucleic Acids 47 minutes/color
Presented by Beer/Varkey
 - #112 Preparation of Thin Foils for TEM 59 minutes/color
Presented by Goodhew
 - #113 Image Recording in the EM 45 minutes/color
Presented by Black:
 - #114 Making Every Electron Count. Detectors for SEM 39 minutes/color
Presented by McMullen
 - #115 Interview 29 minutes/color
Presented by LePoole/Zeitler
 - #116 Unknown Phases by ED/EDS 58 minutes.
Presented by Carr
 - #117 Planar Interfaces & Defects 55 minutes/color
Presented by Pond
 - #118 TEM Characterization of Precipitates 49 minutes/color.
Presented by Dahmen
 - #121 Confocal Scanning Light Microscopy 63 minutes/color.
Presented by Boyde
 - #127 High Spatial Resolution Microanalysis in the AEM 84 minutes.

- Presented by Garrett-Reed
- #130 Colloidal Gold 18 minutes.
Presented by Albrecht/Simmons
- #132 Scanning Tunneling Microscopy Presented by Chiang
- #135 Quantitative Image Analysis 64 minutes.
Presented by Russ
- #136 Convergent Beam Electron Diffraction 51 minutes
Presented by Eaglesham
- #137 Ultramicrotomy 50 minutes.
Presented by Leica
- #138 Sectioning for serial reconstruction 40 min
Presented by Kinnamon
- #140 3-D IVEM Tomography
Presented by Agard
- #144 EM of Ceramics
Presented by Mitchell
- #146 Confocal LM for Biology
Presented by Shuman
- #147 Freeze fracture of Membranes
Presented by Zampighi
- #148 Fundamentals of ALCHEMI
Presented by Turner
- #151 Fluorescence in situ Hybridization in Biomedical Research
Presented by J. Jerome
- #152 Atomic Force Microscopy
Presented by Fisher
- #153 High Resolution MA
Presented by Romig
- #158 Failure Analysis Methods
Presented by Anderson
- #159 Biometrics
Presented by Samakaya
- #160 Cryopreservation
Presented by Costello
- #161 SIMS
Presented by Linton
- #162 Electron excited x-ray Microanalysis
Presented by Newbury
- #163 Microstructure Characterization
Presented by Black
- #164 Introduction to the forgotten Art of Electron Diffraction Contrast
Presented by D. Maher
- #166 Computer-aided Analytic & Visualizations tools for Structural Studies
Presented by B. Carragher
- #168 Recent Advances in Light Microscopy
Presented by B. Herman

- #170 A Basic Introduction to Image Processing Using NIH Image
Presented by J. Mansfield
- #179 A few words on bits and bytes: A tutorial on image Spectral processing for the novice 120 minutes
Presented by J. Mansfield
- #181 Atom-probe analysis of the solid- state liquid interface 120 min.
Presented by J. Panitz
- #182 Image processing and analysis fundamentals for microscopy 120 minutes
Presented by B. Newell
- #183 3-D microscopy, confocal, deconvolution or both 90 minutes
Presented by J.B. Pawley
- #184 Ion beam milling materials with applications to TEM specimen preparation 90 minutes
Presented by R. Anderson
- #185 Five dimensional microscopy using wide field deconvolution, Practical considerations and biological applications 50 minutes
Presented by W. Marshall
- #186 3-D Microscopy using confocal microscopy. 50 minutes
Presented by E. Stelzer
- #197 Negative staining: a valuable technique for studying subcellular components
Presented by S.E. Miller
- #198 Gamma Correction
Presented by J. MacKenzie
- #199 Freeze fracture at the turn of the Century: techniques for visualizing and labeling tissues,cells and molecules
Presented by Yasamura & Rash
- #200 Focussed ion beam milling for site specific TEM
Presented by L. Gianuzzi, J. Drown, S. Brown, R. Erwin & F. Stevie
- #201 Practical Methods for TEM
Presented by K. Chien, R. Gonzalez, R. Heusser, H. Shiroishi & M. Heatherstraw
- #202 Ethics in digital imaging
Presented by S. Silvers, J. Kinnamon, R. Mattson & S. Dunn
- #203 The development and application of the tripod polishing Technique
Presented by J. Benedict, S. Kleipis & R. Anderson
- #204 Tech. Forum, Instrumentation: How to choose it and use it . SPM and SEM
Presented by Russel & Lamberti
- #205 Tech Forum Instrumentation how to choose it and use it. Designing a microscopy lab
Presented by Murphy
- #206 Tech Forum Instrumentation: How to choose it and use it. Microtomes and associatedequipment. Confocals
Presented by Bozzola & Drazba
- #207 Tech. Roundtable: Photoshop 101
Presented by Multiple Speakers
- #208 Outstanding Technologists Awards Recipients.
Presented by Multiple Speakers
- #209 Miniaturized Artificial Machines in Biology

Presented by Multiple Speakers

#211 Transmission electron microscope specimen preparation of metal matrix composites using the focused ion beam miller. 80 minutes

Presented by P. Munroe, J. Cairney & R. Smith

#212 SEM at a distance. Nuts & Bolts 60.00

Presented by S. Barlow

#214 Utility of Secondary Guard Hairs in Animal Hair Identification

Presented by Yates

#215 The Basics of Microtomy for Materials Science Microscopy

Presented by T. Malis

#217 Introduction to Confocal Microscopy

Presented by A. Camea

#218 Uses of Microscopy in the Cime Lab

Presented by McAdam

#219 Funding in the 90's

Presented by (Round Table Discussion)

#221 Single Particle Analysis of Macromolecules and Complexes: How to Get Started. 60 Minutes

Presented by S. Ludtke

#222 Structural Analysis of Proteins on Lipid Substrates. 1 hr.

Presented by E. Wilson-Kubalek

#223 Guide to Three-Dimensional Reconstruction of helical Structures

Presented by DeRosier

#224 Microscopy & Microanalysis Over The Net

Presented by N. Zaluzec

#225 Multi-Photon Excitation Microscopy: An Old Idea in Quantum Theory Applied to Modern Scientific Problems 90 minutes.

Presented by D. Piston

#226 Energy Filtered Imaging

Presented by J. Bentley

#227 Atom Probe Tomography

Presented by M. Miller

#228 Round Table: Safety Issues in the Microscopy Lab 60 minutes

Presented by S. Silvers & E. Boylston

#229 Computational and Experimental Methods in Molecular Microscopy

Presented by NA

#230 Cryomicroscopy Part I

Presented by Presented by P. Echlin & K. McDonald

#231 Cryomicroscopy Part II

Presented by M. Marko et al.

#232 Cryomicroscopy. Part III

Presented by Presented by H. Gnaegi et al.

#233 3-D Visualization Tools

Presented by M. Dougherty

#234 Selective Staining, Contrast Enhancement for biological electron tomography

Presented by M. Ellisman

- #236 Topics in Electron Diffraction TEM
Presented by J. Eades
- #237 Running a multipurpose Microscopy Laboratory
Presented by C. Nockolds
- #238 Variable Pressure SEM. How We image with Them
Presented by B. Griffin.
- #239 Low Voltage SEM (2 tapes)
Presented by D. Joy & D. Newbury
- #240 ESEM/LV/VP: Imaging at Low Vacuum
Presented by (Symposium)
- #241 Dual Beam Instrumentation
Presented by L. Giannuzzi
- #242 Remote Microscopy in Shared and Teaching Facilities
Presented by (Roundtable.)
- #243 Spectral Imaging -
Presented by P. Kotula & M. Keenan
- #248 Scanned Probe Microscopy
Presented by P. Russell
- #250 Basic Confocal Microscopy - Part I
Presented by J. Jerome & R. Price
- #251 Basic Confocal Microscopy - Part II
Presented by J. Jerome & R. Price
- #252 TEM & Polymers → Presented by J.S. Vastenhout
- #253 Electron Backscatter Detection in SEM
Presented by J. Michael
- #254 Cellular Dynamics using AFM
Presented by T. Lehto, et al.
- #255 Cryo-TEM of Large Complexes
Presented by S. Fuller
- #256 Quality Systems for Microscopy & Microanalysis
Presented by E. Steele
- #257 Electron Energy Loss Spectroscopy
Presented by R. Egerton
- #258 Development of CCD Based Digital Imaging for TEM
Presented by S. Peltier & J. Bouwer
- #259 High Resolution TEM: Tomography - Principle & Practice
Presented by D. Smith
- #260 Image Databases: What are they & What do They Bring to Microscopy
Presented by Jose-Maria Carazo
- #261 Creating Site Specific Training Tools
Presented by S. Barlow
- #262 Introduction to the SEM
Presented by D. Joy & D. Newbury
- #263 More Basic Confocal Microscopy - Part 1

Presented by J. Jerome & R. Price

#264 More Basic Confocal Microscopy - Part 2

Presented by R. Price & J. Jerome

#265 More Basic Confocal Microscopy - Part 3

Presented by J. Jerome & R. Price

#266 Techniques for Electron Tomography

Presented by M. Marko

#267 Energy Dispersive X-ray spectrometry in SEM

Presented by Dale Newbury

#268 Introduction to Electron Holography

Presented by Molly McCartney

#269 Introduction to Fluorescence and Image Correlation Spectroscopy

Presented by P. Wiseman

#270 Practical STEM

Presented by David Muller

#271 Building Order in Large Image Data Sets: Classification Techniques at Work!

Presented by J M Carazo Garcia

#272 Computational Tools for Interpreting Electron Tomograms

Presented by N Volkmann

#273 Confocal Microscopy System Performance: Spectroscopy and Foundations for Quantitation

Presented by R M Zucker;

#274 Improved Electron Microscopy with Monte Carlo Simulations

Presented by R Gauvin

#275 In-situ Electron Microscopy: A Practical Tutorial

Presented by E A Stach

#276 Quantum Dots as Cellular Probes for Light and Electron Microscopy

Presented by T J Deerinck,,B N G Giepmans,& M H Ellisman

#277 Theory and Applications of Focal-Series Reconstruction in HRTEM

Presented by A Thust

#278 Fluctuation Electron Microscopy for the MASses

Presented by M M J Treacy

#279 Solve the Mystery (EM for kids)

Presented by Elaine Humphrey

#280 How to Use the Dual Beam FIB-SEM to Characterize Microstructure in 3-D

Presented by Micahel Uchic

#281 Tomographic Reconstruction with the IMOD Software Package

Presented by David Mastronarde

#282 Atom Probe Tomography and Applications to Understanding Nanotechnology

Presented by S.P. Ringer

#283 CCD Technology for Digital Image Capture on Transmission Electron Microscopes

Presented by Brent Bailey

#284 Microwave Processing in a Modern Microscopy Facility

Presented by Elaine Humphry

#285 How to convert 2-D sectioning images to a 3-D Data Set

Presented by M. De Graef

- #286 Serial Sectioning in the Miceon Plus Range & Modern Techniques for Automation
Presented by Jonathan Spowart
- #287 Cryoelectron Tomography
Presented by Daniella Nicastro
- #288 Early Times of Electron Probe Analysis
Presented by NA
- #289 Development of the Beam Forming System of the Electron Microprobe
Presented by NA
- #291 The many Skills of Microprobe Analysis: Absorption Correction and ZAF Analysis
Presented by NA
- #294 Formation of the Summer School for x-ray Microanalysis at MIT: Development of Electron Microprobe Instrumentation.
Presented by NA
- #295 Early Work on Microprobe Analyysis in Japan
Presented by Shinoda
- #296 Biological Electron-Probe X-ray Analysis Development of Geological Applications
Presented by NA
- #297 Round Table Discussion
Presented by Hall., Heinrich Keil, Wittry, Ogilvie, and Shimizu
- #298 Tutorial: Nuclear Microprobe Analysis
Presented by Sandi Nat'l Labs
- #299 (1) High pressure freezing for electron microscopy of biological specimens. (2) Freeze substitution method: tutorial and roundtable discussion Instructors: Paul Stock, Daniel Studer and Kent McDonald
Presented by Stock, Studer & McDonald
- #300 A novel sample freezing method Instructor: Jan Leunissen
Presented by Leunissen
- #301 Electron tomography for materials science Instructor: Paul Midgley
Presented by Midgley
- #302 LACSBI: incoherent imaging for quantitative TEM Instructor: Ian Anderson
Presented by Anderson
- #303 Atomic force microscopy (AFM) and related microscopy Techniques and applications Instructor: Phil R
Presented by Russell
- #304 Creating a successful scientific presentation (Professional Development tutorial) Instructor: Bev M
Presented by Maleef
- #305 Playing the grant game to get the toys (instruments) we want (Professional Development tutorial) I
Presented by Price
- #306 X-ray microCT Instructor: Stuart Stock
Presented by Stock
- #307 Cryo-Fluorescence A Tool for Correlative Cryo-Light and Cryo-Electron Microscopy
Presented by Cindi L. Schwartz
- #308 Live Cell Imaging Limitations.
Presented by Simon Watkins

#309 Electron Backscatter Diffraction Operation and Applications.

Presented by David Field

#310 Electron-Probe Microanalysis (EPMA) An Overview for Beginners and a Status Report for Experts.

Presented by Paul Carpenter

#311 Lorentz Microscopy -- A Versatile Technique for Studying Magnetic Multilayers, Elements and Nanowires

Presented by John Chapman

#312 Stereological Characterization of the Geometry of Three Dimensional Microstructures.

Presented by Robert. T. DeHoff

#313 Image J, A Useful Tool for Image Processing and Analysis.

Presented by Joel B. Sheffield

#314 Job Hunting for Scientific Professionals.

Presented by Bev Maleeff