

## **Sabee Molloi, Ph.D.**

University of California  
Department of Radiological Sciences  
Medical Sciences I, B-140  
Irvine, CA 92697-5000  
USA

**Phone:** (949) 824-5904

**Fax:** (949) 824-8115

**E-Mail:** [SYMOLLOI@UCI.EDU](mailto:SYMOLLOI@UCI.EDU)

**Position:** Professor

Radiology, Medicine (Cardiology), Biomedical Engineering and Electrical Engineering and  
Computer Sciences

### **Education:**

B.S., Chemistry and Physics, Mankato State University  
M.S., Medical Physics, University of Wisconsin-Madison  
Ph.D., Medical Physics, University of Wisconsin-Madison

### **Research Interest:**

My research interest is in the area of medical x-ray imaging. I am particularly interested in:

- The quantitative aspects of dual-energy subtraction and its applications to cardiac imaging and mammography.
- Regional coronary artery blood flow measurement and its applications in the assessment of coronary artery stenosis severity.
- Quantification of coronary artery cross-sectional area and lumen volume.
- Analytical analysis of the design rules for coronary arterial tree and its applications in diffuse coronary artery disease quantification.

## **PUBLICATIONS**

### *Peer-Reviewed Journals*

- J-1. Molloi S, Chalyan D, Le H, Wong J, "Estimation of coronary hyperemic artery blood flow based on arterial lumen volume using angiographic images" Int J Cardiovasc Imaging. **28**:1–11, 2012.
- J-2. Wong J, Le H, Suh W, Chalyan D, Mehraien T, Kern M, Kassab G, Molloi S, "Quantification of fractional flow reserve based on angiographic image data", Int J Cardiovasc Imaging. **28**:13–22, 2012.
- J-3. Ding H, Ducote J, Molloi S, "Breast composition measurement with a Cadmium-Zinc-Telluride (CZT) based spectral computed tomography system" Medical Physics, **39**(3):1289-97, 2012.

- J-4. Ding H, Molloy S, "Image-based spectral distortion correction for photon-counting X-ray detectors" Medical Physics, **39(4)**:1864-76, 2012.
- J-5. Baturin P, Alivov Y, Molloy S, "Spectral CT imaging of vulnerable plaque with two independent biomarkers" Phys. Med. Biol., **57**:4117–4138, 2012.
- J-6. Klopfer M, Wolowiec T, Satchouk V, Alivov Y, Molloy S, "Characterization and optimization of pyroelectric X-ray sources using Monte Carlo spectral models" Nuclear Instruments & Methods in Physics Research (Section A). In-press, 2012.
- J-7. Ding H, Molloy S, "Quantification of breast density with spectral mammography based on a scanned multi-slit photon-counting detector: A feasibility study" Phys. Med. Biol., **57(15)**:4719-38, 2012.
- J-8. Zhang Z, Takarada S, Molloy S, "Quantification of Absolute Coronary Flow Reserve and Relative Fractional Flow Reserve in a Swine Animal Model using Angiographic Image data" Am J Physiol Heart Circ Physiol, In-press, 2012.
- J-9. Takarada S, Zhang Z, Molloy S, "An Angiographic Technique for Coronary Fractional Flow Reserve Measurement: In-vivo Validation", Int J Cardiovasc Imaging. In-press, 2012.
- J-10. Xu T, Ducote J, Wong J, Molloy S, "Dynamic dual-energy chest radiography: a potential tool for lung tissue motion monitoring and kinetic study" Phys. Med. Biol., **56**: 1191–205, 2011.
- J-11. Le H, Molloy S, "Least squares parameter estimation methods for material decomposition with energy discriminating detectors" Medical Physics, **38**: 245-55, 2011.
- J-12. Le H, Molloy S, "Segmentation and quantification of materials with energy discriminating computed tomography: a phantom study" Medical Physics, **38**: 228-37, 2011.
- J-13. Ducote J, Alivov Y, Molloy S, "Imaging of nanoparticles with dual-energy computed tomography" Phys. Med. Biol., **56(7)**: 2031-44, 2011.
- J-14. Alivov Y, Klopfer M, Molloy S, "Effect of TiO<sub>2</sub> nanotube parameters on field emission properties" Nanotechnology, **21(50)**: 505706 , 2011.

- J-15. Zhang Z, Takarada S, Molloi S, "Quantification of coronary microvascular resistance using angiographic images for volumetric blood flow measurement: In-vivo validation" Am J Physiol Heart Circ Physiol, **300(6)**:H2096-104, 2011.
- J-16. Lu X, Dang CQ, Guo X, Molloi S, Wassall C, Kemple M, Kassab G, "Elevated oxidative stress and endothelial dysfunction in right coronary artery of right ventricular hypertrophy." J Appl Physiol, **110(6)**:1674-81, 2011.
- J-17. Zhang Z-D, Svendsen M, Choy JS, Sinha AK, Huo Y, Yoshida K, Molloi S, Kassab GS, "New Method to Measure Coronary Velocity and Flow Reserve" Am J Physiol Heart Circ Physiol, **301(1)**:H21-8, 2011.
- J-18. Zhang Z, Takarada S, Molloi S, "Assessment of Coronary Microcirculation in a Swine Animal Model" Am J Physiol Heart Circ Physiol, **301(2)**: H402-8, 2011.
- J-19. Ducote J, Klopfer M, Molloi S, "Volumetric lean percentage measurement using dual energy mammography" Medical Physics, **38(8)**: 4498-4504, 2011.
- J-20. Alivov Y, Klopfer M, Molloi S, "Enhanced field emission from clustered TiO<sub>2</sub> nanotube arrays" Applied Physics Letters, **99(6)**: 063104-3, 2011.
- J-21. Ducote J, Molloi S, "Quantification of breast density with dual energy mammography: An experimental feasibility study" Medical Physics, **37(2)**:793-801, 2010.
- J-22. Ducote J, Molloi S, "Scatter correction in quantitative dual energy mammography" Phys. Med. Biol., **55**: 1295-1309, 2010.
- J-23. Le H, Ducote J, Molloi S, "Radiation dose reduction using a CdZnTe-based breast computed tomography system: comparison to Flat Panel detectors" Medical Physics, **37(13)**:1225-36, 2010.
- J-24. Alivov Y, Molloi S, "Self-organization of anatase TiO<sub>2</sub> nanoparticles to regular shape clusters" Crystal Growth & Design, **10**:1721-1724, 2010.
- J-25. Alivov Y, Klopfer M, Molloi S, "TiO<sub>2</sub> nanotubes as a new cold cathode for x-ray generation" Applied Physics Letters, **96**: 2435021-3, 2010.
- J-26. Alivov Y, Molloi S, "Calculation of field emission enhancement for TiO<sub>2</sub> nanotube arrays" Journal of Applied Physics, **108**: 243031-4, 2010.
- J-27. Molloi S, Mehraien T, Iribarren C, Smith C, Ducote J, Feig S "Reproducibility of breast arterial calcium mass quantification using digital mammography" Academic Radiology, **16(3)**:275-82, 2009.

- J-28. Ducote J, Molloi S, "Quantification of breast density using dual energy mammography: A simulation study" Medical Physics, 35(12):5411-8, 2008.
- J-29. Le H, Wong J, Molloi S, "Allometric scaling in the coronary arterial system" International Journal of Cardiovascular Imaging, 2008 Mar 20. [Epub ahead of print]
- J-30. Le H, Wong J, Molloi S, "Estimation of regional myocardial mass at risk based on distal arterial lumen volume and length using 3D micro-CT images" Computerized Medical Imaging and Graphics, 32(6):488-501, 2008.
- J-31. Wong J, Molloi S, "Determination of fractional flow reserve (FFR) based on scaling laws: a simulation study". Phys. Med. Biol., 53(14):3995-4011, 2008.
- J-32. Molloi S, Xu T, Ducote J, Iribarren C, "Quantification of breast arterial calcification using full field digital mammography" Medical Physics, 35(4):4003-4015, 2008.
- J-33. Wong J, Kamyar K, Molloi S, "Quantitative coronary angiography using image recovery techniques for background estimation in unsubtracted images". Medical Physics, 34(10):4003-4015, 2007.
- J-34. Molloi S, Wong J, "Regional blood flow analysis and its relationship with arterial branch lengths and lumen volume in coronary arterial tree". Phys. Med. Biol., 52:1495–1503, 2007.
- J-35. Ducote J, Xu T, Molloi S, "Dual energy cardiac imaging: an image quality and dose comparison for a flat panel detector and x-ray image intensifier" Phys. Med. Biol., 52:183–196, 2007.
- J-36. Xu T, Wong J, Ducote J, Al-Ghazi M, Molloi S, "Real-time tumor tracking using implanted positron emitters: concept and simulation study" Medical Physics, 33(7):2598-609, 2006.
- J-37. Ducote J, Xu T, Molloi S, "Optimization of a flat-panel based dual-energy fluoroscopy system for cardiac imaging" Medical Physics, 33(6):1562-1568, 2006.
- J-38. Xu T, Ducote J, Wong J, Molloi S, "Feasibility of dual-energy fluoroscopy based on a flat panel detector for coronary artery calcium quantification" Medical Physics, 33(6):1612-1622, 2006.
- J-39. Shikhaliev P, Xu T, Ducote J, Balasubram E, Mukherjee J, Molloi S, "Positron autoradiography for intravascular imaging: feasibility evaluation", Phys. Med. Biol., 51 963-979, 2006.
- J-40. Movahed MR, Wong J, Molloi S. "Removal of iodine contrast from coronary sinus in swine during coronary angiography." J Am Coll Cardiol, 2006;47 465-467.

- J-41. Wong J, Ducote J, Xu T, Hassanein M, Molloi S, "Automated technique for angiographic determination of coronary blood flow and lumen volume". Acad Radiol., 2006 Feb;13(2):186-94.
- J-42. Choy S, Dang Q, Molloi S, Kassab G, "Nonuniformity of axial and circumferential remodeling of large coronary veins in response to ligation." Am J Physiol Heart Circ Physiol. 2005 Nov 18.
- J-43. Shikhaliev P, Molloi S, "Count rate and dynamic range of an X-ray imaging system with MCP detector" Nuclear Instruments & Methods in Physics Research (Section A). 557(2) 501-509, 2006.
- J-44. Mittal N, Zhou Y, Linares C, Molloi S, Kassab G, "Analysis of blood flow in the entire coronary arterial tree" Am J Physiol Heart Circ Physiol., 2005 Jul;289(1):H439-46. Epub 2005 Mar 25.
- J-45. Shikhaliev P, Xu T, Ducote J, Molloi S, "Quantum efficiency of MCP detectors: Monte Carlo calculations" IEEE Transactions in Nuclear Sciences, 52(5):1257-1262, 2005.
- J-46. Mittal N, Zhou Y, Ung S, Linares C, Molloi S, Kassab G, "A computer reconstruction of the entire coronary arterial tree based on detailed morphometric data" Ann Biomed Eng. 2005 Aug;33(8):1015-26.
- J-47. Shikhaliev P, Xu T, Molloi S, "Photon counting computed tomography: concept and initial results" Medical Physics, 32(2):427-436, 2005.
- J-48. Ko SJ, Liao X, Molloi S, Elmore E, Redpath J, "Neoplastic transformation in vitro after exposure to low doses of mammographic-energy x-rays: Quantitative and mechanistic aspects" Radiation Research, 162:645-654, 2004.
- J-49. Wong J, Xu T, Husain A, Le H, Molloi S, "Effect of area X-ray beam equalization on image quality and dose in digital mammography" Physics in Medicine and Biology, 49:3539-3557, 2004.
- J-50. Xu T, Al-Ghazi M, Molloi S, "Treatment planning considerations of reshapeable automatic intensity modulator for intensity modulated radiation therapy" Medical Physics, 31(8):2344-2355, 2004.
- J-51. Molloi S, Zhou Y, Kassab G, "Regional volumetric coronary blood flow by digital angiography: In-vivo validation" Academic Radiology, 11(7):757-766, 2004.
- J-52. Shikhaliev P, Xu T, Le H, Molloi S, "Scanning slit photon counting X-ray imaging system using a microchannel plate detector" Medical Physics, 31(5):1061-1071, 2004.
- J-53. Xu T, Shikhaliev P, Berenji G, Tehranzadeh J, Saremi F, Molloi S, "Area beam equalization: optimization and performance of an automated prototype system for chest radiography" Academic Radiology, 11(4):377-389, 2004.

- J-54. Pant M, Liao X, Lu Q, Molloi S, Elmore E, Redpath J, "Mechanism of suppression of neoplastic transformation in vitro by low doses of low LET radiation" Carcinogenesis, 24(12):1961-1965, 2003.
- J-55. Chen Z, Xu T, Molloi S, "Vessel diameter estimation in X-ray angiographic images using a watergauge algorithm" Journal of Electronic Imaging, 12(4):724-742, 2003.
- J-56. Molloi S, Dang Q, Breault J, "Effect of vessel orientation on videodensitometry quantitative coronary arteriography" Medical Physics, 30(11):2862-2868, 2003.
- J-57. Chen Z, Molloi S, "Automatic 3-D vascular tree construction in CT angiography" Computerized Medical Imaging and Graphics, 27(6):469-479, 2003.
- J-58. Molloi S, Berenji G, Dang T, Kassab G, "Assessment of vasoreactivity using videodensitometry coronary angiography" International Journal of Cardiovascular Imaging, 19:271-279, 2003.
- J-59. Shikhaliev P, Molloi S, "X-ray imaging with "edge-on" Microchannel Plate detector: first experimental results" Nuclear Instrumentation and Methods in Physics Research A, 510:401-405, 2003.
- J-60. Redpath J, Lu Q, Lao X, Molloi S, Elmore E, "Low doses of diagnostic energy x-rays protect against neoplastic transformation in vitro" International Journal of Radiation Biology, 79(4):235-240, 2003.
- J-61. Hamza L, Dang Q, Lu X, Mian A, Molloi S, Kassab G, "The effect of passive myocardium on the compliance of porcine coronary arteries" American Journal of Physiology, 285:H653-H660, 2003.
- J-62. Chen Z, Molloi S, "Multiresolution vessel tracking in angiographic images using valley courses" Optical Engineering, 42(6):1673-1682, 2003. Also published in the Virtual Journal of Biological Physics Research, 5(11), 2003.
- J-63. Xu T, Le H, Molloi S, "A patient specific region of interest fluoroscopy device for dose reduction" Radiology, 226(2):585-592, 2003.
- J-64. Xu T, Shikhaliev P, Al-Ghazi M, Molloi S, "Reshapable physical modulator for intensity modulated radiation therapy" Medical Physics, 29(10):2222-2229, 2002.
- J-65. Chen Z, Molloi S, "Vascular tree object segmentation by deskeletonization of valley courses" Computerized Medical Imaging and Graphics, 26(6):419-428, 2002.
- J-66. Zhou Y, Kassab G, Molloi S, "In vivo validation of the design rules of the coronary arteries and their application in the assessment of diffuse disease" Physics in Medicine and Biology, 47(6):977-993, 2002.

- J-67. Shikhaliev P, Molloi S, "Applications of "edge-on" illuminated Porous Plate detectors for diagnostic X-ray imaging" Nuclear Instrumentation and Methods in Physics Research A, 487:676-684, 2002.
- J-68. Molloi S, Van Drie A, Wang F, "X-ray beam equalization: Feasibility and performance of an automated prototype system in a phantom and swine" Radiology, 221(3): 668-675, 2001.
- J-69. Kassab G, Molloi S, "Cross-sectional area and volume compliance of the porcine left coronary arteries" American Journal of Physiology, 281:H623-H628, 2001.
- J-70. Molloi S, Kassab G, Zhou Y, "Quantification of coronary lumen volume by digital angiography: In-vivo validation" Circulation, 104:2351-2357, 2001.
- J-71. Zhou Y, Kassab G, Molloi S, "On the design of the coronary arterial tree - A generalization of Murray's law" Physics in Medicine and Biology, 44(5): 2929-2945, 1999.
- J-72. Molloi S, Tang G, Mather T, Zhou Y, "Area x-ray beam equalization for digital angiography" Medical Physics, 26(12): 2684-2692, 1999.
- J-73. Zhou Y, Mather T, Molloi S, "Scatter and veiling glare estimation based on sampled primary intensity" Medical Physics, 26(11): 2301-2310, 1999.
- J-74. Molloi S, Zhou Y, Wamsely G, "Scatter-glare estimation for digital radiographic systems: Comparison of digital filtration and sampling techniques" IEEE Transaction in Medical Imaging, 17(6):881-888, 1998.
- J-75. Molloi S, Bednarz G, Tang J, Zhou Y, Mather T, "Absolute volumetric coronary blood flow measurement with digital subtraction angiography" International Journal of Cardiovascular Imaging, 14:137-145, 1998.
- J-76. Molloi S, Zhang W, Leung C, Hiro T, Hicks J, "Measurement of a cross-sectional area of normal and stenotic arteries with videodensitometric quantitative arteriography and intravascular ultrasound" Academic Radiology, 4:245-252, 1997.
- J-77. Molloi S, Ersahin A, Tang J, Hicks J, Leung C, "Quantification of volumetric coronary blood flow with dual-energy digital subtraction angiography" Circulation, 93:1919-1927, 1996.
- J-78. Hicks J, Ishimatsu A, Molloi S, Ersahin A, Heisler N, "The mechanism of cardiac shunting in reptiles: A new synopsis" Journal of Experimental Biology, 199:1435-1446, 1996.
- J-79. Detrano R; Tang W; Kang X; Mahaisavariya P; McCrae M; Garner D; Peng SK; Measham C; Molloi S; Gutfinger D; et al., "Accurate coronary calcium phosphate mass

measurements from electron beam computed tomograms" American Journal of Cardiac Imaging, 9(3):167-73, 1995.

- J-80. Molloi S, Ersahin A, Hicks J, Wallis J, "In-vivo validation of videodensitometric coronary cross-sectional area measurement using dual-energy digital subtraction angiography" International Journal of Cardiovascular Imaging, 11(4):223-231, 1995.
- J-81. Ersahin A, Molloi S, Hicks J, "Absolute phasic blood flow measurement in the brain using digital subtraction angiography" Investigative Radiology, 30(4): 244-253, 1995.
- J-82. Mahaisavariya P, Detrano R, Kang X, Garner D, Vo A, Georgiou D, Molloi S, Brundage BH, "Quantitation of in vitro coronary artery calcium using ultrafast computed tomography". Catheterization and Cardiovascular Diagnosis, 32(4):387-393, 1994.
- J-83. Ersahin A, Molloi S, Qian Y, "A digital filtration technique for Scatter-glare correction based on thickness estimation". IEEE Transaction on Medical Imaging, 14(3):587-595, 1995.
- J-84. Molloi S, Ersahin A, Qian Y, "CCD camera for dual-energy digital subtraction angiography". IEEE Transaction on Medical Imaging, 14(4):747-752, 1995.
- J-85. Detrano R, Kang X, Mahaisavariya P, Tang W, Colombo A, Molloi S, Garner D, Nickerson S, "Accuracy of quantifying coronary hydroxyapatite with electron beam tomography". Invest Radiol, 29(8):733-738, 1994.
- J-86. Molloi S, Qian Y, Ersahin A, "Absolute volumetric blood flow measurements using dual-energy digital subtraction angiography". Medical Physics, 20 (1): 85-91, 1993.
- J-87. Detrano R, Molloi S: "Radiographically detectable calcium and atherosclerosis: the connection and its exploitation". International Journal of Cardiovascular Imaging, 8(3):209-215, 1992.
- J-88. Weber DM, Molloi SY, Folts JD, Peppler WW, Mistretta CA: "Geometric quantitative coronary arteriography. A comparison of unsubtracted and dual-energy subtracted images". Invest Radiol, 26(7): 649-654, 1991.
- J-89. Molloi S, Ersahin A, Roeck W, Nalcioglu O: "Absolute cross-sectional area measurements in quantitative coronary arteriography by dual-energy DSA". Invest Radiol, 26: 119-127, 1991.
- J-90. Molloi S, Detrano R, Ersahin A, Roeck W, Morcos C: "Quantification of coronary arterial calcium by dual energy digital subtraction fluoroscopy". Medical Physics, 18(2):295-298, 1991.
- J-91. Molloi SY, Weber DM, Peppler WW, Folts JD, Mistretta CA: "Quantitative dual-energy coronary arteriography". Invest Radiol, 25:908-914, 1990.



- J-92. Molloi SY, Mistretta CA: "Quantification techniques for dual-energy cardiac imaging". Medical Physics, 16(2):209-217, 1989.
- J-93. Molloi SY, Mistretta CA: "Scatter-glare corrections in quantitative dual-energy fluoroscopy". Medical Physics, 15(3): 289-297, 1988.
- J-94. Molloi S, Mazess R, Bendsen H, Wilson M: "Whole body and regional retention of 99m Tc-labeled diphosphonates with whole-body counter: A study with normal males". Calcif Tissue Int., 44:322-329, 1989.
- J-95. Van Lysel MS, Ergun DL, Miller WP, Toggart EJ, Cusma JT, Pepler WW, Molloi S, Mistretta CA: "Cardiac digital angiography and dual-energy subtraction imaging: current and future trends". Amer J Cardiac Imaging, 1:254-256, 1987.
- J-96. Light MC, Molloi SY, Yandow DR, Ranallo FN: "Scatter radiation exposure during knee arthrography". Radiology, 164:867-868, 1987.

## **PROCEEDINGS PUBLICATIONS**

- P-1. Molloi S, Wong J.T, Chalyan D.A, Le H.R: "Quantification of Fractional Flow Reserve Using Angiographic Image Data". World Congress on Medical Physics and Biomedical Engineering, Munich, Germany; Olaf Dössel and Wolfgang C. Schlegel (Eds.): IFMBE Proceedings 25/II, p. 901-904, 2009.
- P-2. Shikhaliev P, Xu T, Molloi S, "Evaluation of a scanning slit x-ray imaging detector based on microchannel plates for mammography applications", SPIE Medical Imaging, San Deigo, California: Physics of Medical Imaging (ed. M.J. Yaffe and M.J. Flynn), 5368: 726-733, 2004.
- P-3. Chen Z, Molloi S, "A vessel valley-course generation algorithm for quantitative analysis of angiograms", SPIE Medical Imaging, San Deigo, California: Image Processing (ed. M. Sanka and J. M. Fitzpatrick), 4684: 1488-1495, 2002.
- P-4. Chen Z, Molloi S, "Fast vessel identification using polyphase decomposition and inter-component processing", SPIE Medical Imaging, San Deigo, California: Image Processing (ed. M. Sanka and J. M. Fitzpatrick), 4684: 1653-1661, 2002.
- P-5. Xu T, Huy Le, Molloi S, "An Arbitrary Shape Region of Interest Fluoroscopy System", SPIE Medical Imaging, San Deigo, California: Physics of Medical Imaging (ed. L.E. Antonuk and M.J. Yaffe), 4682: 732-737, 2002.
- P-6. Shikhaliev P, Molloi S, "A new detector concept for X-ray imaging using "edge-on" illuminated Porous Plates", SPIE Medical Imaging, San Deigo, California: Physics of Medical Imaging (ed. L.E. Antonuk and M.J. Yaffe), 4682: 570-579, 2002.

- P-7. Molloi S, Tang G, Marcin M, Zhou Y, Anvar B, "X-ray beam equalization for digital fluoroscopy", SPIE Medical Imaging, Newport Beach, California: Physics of Medical Imaging (ed. R.L.Van Metter and J. Beutel) 2708: 167-178, 1996.
- P-8. Molloi S, Wamsely G, Zhou Y, "Scatter-glare estimation for quantitative cardiac imaging", SPIE Medical Imaging, Newport Beach, California: Physics of Medical Imaging (ed. R.L.Van Metter and J. Beutel) 2708: 150-156, 1996.
- P-9. Ersahin A, Molloi S, Hicks J, Qian Y, "Absolute volumetric blood flow quantification in rabbit brain using digital subtraction angiography". SPIE Medical Imaging, Newport Beach, California: Function from Multidimensional Images (eds. E.A. Hoffman and R.S. Acharya) 2168: 269-280, 1994.
- P-10. Ersahin A, Molloi S, Qian Y, "Scatter and veiling glare corrections in quantitative digital subtraction angiography", SPIE Medical Imaging, Newport Beach, California: Physics of Medical Imaging (ed. R. Shaw) 2163: 172-183, 1994.
- P-11. Lee CS, Pepler WW, Van Lysel, Cusma JT, Folts JD, Zarnstorff WC, Mistretta CA, Dobbins III JT, Hasegawa BH, Naimuddin S, Molloi S, Hangiandreou N, Lancaster JC: "Adaptive processing algorithms for intravenous digital subtraction coronary angiography". SPIE Appl Opt Instr Med XIII, 535:369-377, 1985.
- P-12. Hasegawa BH, Naimuddin S, Dobbins JT III, Pepler WW, Van Lysel MS, Cusma JT, Lancaster JC, Hoffman P, Lee CS, Molloi S, Mistretta CA, Kudva BV, Melbye KM: "Design of a digital beam attenuator for chest radiography". SPIE, Appl Opt Instr Med XIII, 535:332-335, 1985.
- P-13. Hasegawa BH, Dobbins JT III, Pepler WW, Cusma JT, Mistretta CA, Kudva BV, Van Lysel MS, Lee CS, Naimuddin S, Lancaster JC, Molloi S: "Feasibility of selective exposure radiography". SPIE, Appl Opt Instr Medicine XII, 454: 1271-1278, 1984.
- P-14. Hasegawa BH, Naimuddin S, Dobbins JT III, Pepler WW, Cusma JT, Van Lysel MS, Lancaster JC, Lee CS, Molloi S, Mistretta CA, Kudva BV, Melbye KM: "Application of a digital beam attenuator to chest radiography". SPIE, Conference on Medical Imaging and Instrumentation '84, 486:2-7, 1984.
- P-15. Wilson CR, Smith D, Foley WD, Molloi S: "Blood flow determination using IV DSA". SPIE, Conf on Medical Imaging and Instrumentation '84, 486:118-121, 1984.