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Specialization: Fine arts conservator in private practice; expert in the scientific examination and authentication of works of art.

Publications

- DeCruz, A., Andreotti, A., Ceccarini, A., Colombini, M.P. Laser cleaning of works of art: evaluation of the thermal stress induced by Er:YAG laser. *Applied Physics B: Lasers and Optics*. June 2014.
- Samineni, P., DeCruz, A., Warren, W.S. and Fischer, M., Pump-probe imaging of historical pigments used in painting. *Optics Letters*, February, 2012.
- DeCruz, A., Wolbarsht, M.L., Culberson, C. F., Andreotti, A., Colombini, M.P. and Pinna, D. Investigation of the Er:YAG laser (2.94 mm) in cleaning of lichens growing on stone. *Studies in Conservation*. December, 2009.
- Andreotti, A., Bracco, P., Colombini, M. P., DeCruz, A., Lanterna, G., Nakahara, K. and Penaglia, F., "Novel Applications of the Er:YAG Laser: Cleaning of Old Paintings." *Proceedings of the Sixth International Conference on Lasers in the Conservation of Artworks*, Vienna, Austria, Sept. 21-25, 2005 pp.239-247, 2007.
- Andreotti, A., Colombini, M.P., Felici, A., DeCruz, A., Lanterna, G., Lanfranchi, M., Nakahara, K. and Penaglia, F., "Preliminary Results of the Er:YAG Laser Cleaning of Mural Paintings," *Lasers in the Conservation of Art Works*, *Proceedings of the Sixth International Conference*, Vienna, Austria, Sept. 21-25 pp. 214-220, 2007.
- Andreotti, A., Colombini, M. P., Conti, S., DeCruz, A., Lanterna, G., Nussio, L., Nakahara, K. and Panaglia, F., "Preliminary Results of the Er: YAG Laser Cleaning of Textiles, Paper and Parchment", *Lasers in the Conservation of Art Works*, *Proceedings of the Sixth International*, Vienna, Austria, Sept. 21-25, 2005 pp. 203-210, 2007.
- DeCruz, A., Hauger, S. A., Wolbarsht, M.L., *The Role of Lasers in Fine Arts Conservation and Restoration*. Palm Beach: *America's International Fine Art and Antiques*. , pp. 24-29. Palm Beach, Fla., 2007.
- DeCruz, A., Palmer, R. A., Andreotti, A., Colombini, M.P., Castellucci, E. M., Striova, J., Matteini, M. and Sansonetti, A., Design of a research program on the effects of Er:YAG Laser Radiation on Mural Painting: preliminary results on the case study of the "Cimitero Monumentale" in Pisa, Italy. *Proceedings of the 12th Laser Conference on Laser Optics*, St. Peterburg, Russia, June 26-30, 2006.
- DeCruz, A., Andreotti, A., Colombini, M.P., Castellucci, E.M., Striova, J., Matteini, M. and Sansonetti, A., "The Interaction of Er: YAG laser with

- organic materials used in conservation of mural paintings;" XXII, National Congress of Italian Chemical Society, Florence, September 2005
- DeCruz, A., Bracco, P., Lanterna, G., Matteini, M. and Wolbarsht, M.L. Er:YAG Laser Applications on Marble and Limestone Sculptures with Polychrome and Patina Surfaces. *Lasers in the Conservation of Artworks*. Osnabruck, Germany. pp.112- 124. 2005.
- Pierce, S.E., Ingram, P., DeCruz, A. and Palmer, R. A., "FTIR for the Analysis of Contaminants Removed from Polychrome Statues with an Erbium: YAG Laser at 2.94 μ m", *Proceedings of the Sixth Infrared and Raman Users Group Conference (IRUG 6)*, Florence, Italy, 2005.
- Adamkiewicz, E., Bracco, P., Colombini, M. P., DeCruz, A., Lanterna, G., Matteini, M., Nakahara, K. Sartiani, O. and Wolbarsht. M.L., "Er:YAG Laser: An Innovative Tool for Controlled Cleaning of Old Paintings: Testing and Evaluation." *Journal of Cultural Heritage*, IV: p 202-208, January 2003.
- DeCruz, A., Wolbarsht, M.L. and Hauger, S.A. "The Introduction of Lasers as a Tool in Removing Contaminants from Painted Surfaces." *Art et Chimie la Couleur. Actes du congres*. pp. 157-162. Ed. J.Goupy & J-P Mohen, CNRS Editions, Paris, 2000.
- DeCruz, A., Wolbarsht, M. L., Hauger, S. A. Laser removal of contaminants from painted surfaces. *Lasers in the Conservation of Artworks, LACONA III*, J. Cult Heritage. Elsevier, 2000. Pp. 173-180.
- DeCruz, A., Hauger, S. A. and Wolbarsht. M.L."The Role of Lasers in Fine Arts Conservation and Restoration. *Optics & Photonics*, 10:7 (July 1999).
- DeCruz, A. "Frank Duveneck: the Gloucester Years, 1892-1917." In *Frank Duveneck: The Gloucester Years*, New York: David Findlay Galleries, 1990.

Reports

- DeCruz, A., "Scientific Analysis of Antique Coins for the Collection of the American Academy Rome," May, 2011.
- DeCruz, A. Conservation Report of Roman Cinerary Urn, from the collection of St. Louis Art Museum, March, 2013.

Education

- School of Architecture, Columbia University, New York, 1985-87.
Professional Studies in Historic Preservation.
- Institute of Fine Arts, Villa Schifanoia, Rosary College (Dominican University), Florence, Italy, M.F.A. and Laurea Professional in Fine Arts Conservation, 1979. Dissertation with Honors: "Theory and Practice of Conservation of Oil Paintings on Canvas."
- Metropolitan Museum of Art, New York, 1975. Conservation Intern.
- Marymount College, B.A. *magna cum laude*, 1973.

Languages: Fluent English and Italian, Literate in Spanish.

Professional Experience

- Union College, Research Professor Dept. of Physics, 2012-present.
- University of Florence, Italy. School of Natural Science, Dept. of Paleontology, Collaborating Conservator. 2014-2017.

Istituto de Geoscienze e Georisorse-CNR, Principle Investigator,
Collaborating Conservator, Florence, Italy, 2013-2016.

North Carolina Museum of Art, Collaborating Conservation Scientist Laser
Photonics, 2011 to present.

Duke University, Fitzpatrick Institute for Photonics, Faculty, 2009-present.

Duke University, Department of Biology, Associate Adjunct Professor, 2008-
present.

Duke University, Department of Chemistry, Associate Adjunct Professor,
2005 -present.

University of Pisa, Italy. Visiting Professor of Conservation Science, 2005-
present.

ICVBC, Center for National Research, Florence, Italy, Collaborating
Conservator, 2005 – present.

Opera del Duomo, Pisa, Italy. Conservator. Use of lasers to clean the "Il
trionfo delle Morte" frescos, 2007-2009.

Vatican Museums, Rome, Italy, Consulting Conservator. Application of the
Er: YAG laser to the Michelangelo frescos in the Pauline Chapel and
Research in photonics. 2001, 2005-2007.

Ottmar Collection of Art. Conservator of Collection. European and American
Paintings collection. Cambridge, MA, Del Rye Beach, Fla. 1996 to the
present.

Duke University, Museum of Art, Senior Research Conservator, 2002-2005.

Opificio della Pietre Dure, Firenze, Italy, Collaborating Conservator, 1999-
2005. Use of lasers in cleaning polychrome surfaces.

Duke University, Department of Physics, FEL Laboratory, Researcher. Laser
techniques in conservation research. 1995-2003.

Duke-Semans House, New York. Conservator. 1994-2003. Laser techniques
in conservation research.

Houston Museum of Fine Arts, Texas, Conservator in Residence, 1988.

San Antonio Museum of Art, Texas. Conservation Supervisor. Inaugural
Exhibition of British Paintings from the Sarah Campbell Blaffer
Foundation, 1988.

Wake Forest University, Winston-Salem, North Carolina, Conservator in
Residence, 1987.

Columbia University, New York, Conservation Laboratory, Consultant, 1986-
1988.

El Paso Art Museum, Texas, Conservator-in-Residence, Samuel H. Kress
Collection, 1984.

University of Notre Dame, South Bend, Indiana, Conservator and Visiting
Lecturer-in-Residence, 1983-1984.

North Carolina Museum of Art, Raleigh. Chief Conservator, 1979-1982.
Special Conservator, Samuel H. Kress Collection, 1979-1981. Special
Administrator, Tapestry Restoration of Samuel H. Kress Collection, 1980-
1982.

Stanford University, Applied Physics, Dissertation Research, Effects of
Lasers on Paintings, 1978.

Expert Witness

Authentication of Latin American Prints on Paper. New York City Civil
Court.

Authentication of a Collection of Old Master Prints. Durham County, North Carolina, Civil Court.

Authentication of 17th to 19th Century European Paintings. Ottmar Collection of Paintings and Sculpture, Del Ray Beach, Florida.

Professional Societies and Panels

American Institute for the Preservation of Historic Works of Art (AIC), Member.

Columbia University, Preservation Alumni Group, Member.

Institute of Museum Services, Member and Jury Participant.

International Institute for the Conservation of Historic and Artistic Works (IIC), Member

Salmagundi Club, New York City, Artist Member.

Honors

NSF Grant, Collaborative Research: Development of Nonlinear Optical Contrast for Artwork Imaging 09/01/13-08/31/16

Gordon Research Conference, Scientific Methods in Cultural Heritage Research, July 29-August 3, 2012.

Mary D.B.T. Semans Grant, Duke University, Research Grant, 2012.

American Academy Rome, Scholar in Residence, Jan.-Jun, 2012.

Michael J. Boberschmidt Award, Duke University, Advanced research in laser technology. 2009, 2011, 2012, 2013,2014.

Mary D.B.T. Semans Grant, Duke University, Research Grant, 2009

Mary Duke Biddle Foundation Grant, Duke University 2005, 2006, 2007.

Mary Duke Biddle Foundation Grant, Duke University Museum of Art, Research Grant, 2003, 2004.

Ottmar Foundation Grant, Duke University Laser Research in Fine Arts Conservation, 1997 to present.

University of Notre Dame, Mario Modestini Fellowship, Samuel H. Kress Collection, Snite Art Museum, 1982-1984.

Samuel H. Kress Fellowship, 1974, 1975.

Myron Taylor Fellowship, 1975, 1974, 1973.

National Endowment of the Arts Fellowship, Gold Medal—Art, 1973.

Who's Who, American College and University Students, 1973.

Patents

Myron L. Wolbarsht and Adele deCruz. U.S. Patent #5,951,778, 14 September 1999, "Method for cleaning artwork."

Adele de Cruz and Myron L. Wolbarsht. "Method for cleaning artwork." European Patent: England, France, Germany, Italy, Spain, Portugal, Denmark, Holland, Greece, and Egypt. 2006.

Invited Lectures

June 10, 2014, LACONA X, The Tenth Conference on Lasers in the Conservation of Artworks, Er:YAG laser cleaning of works of art: evaluation of the thermal effects', The American University of Sharjah, Emirati Arabi.

May 31, 2014. 42 Annual AIC, Conference. The Analysis and Removal of an Intractable Coating from a Panel Painting by Lluís Borrassa. San Francisco.

June 25, 2013. International Symposium Fundamentals of Laser Assisted Micro and Nanotechnologies (FLAMN-13), Invited Speaker. "The removal of encrustation from the surface of a marble Roman Urn." St. Petersburg, Russia.

June 14, 2013. . Ampere Summer School on Analyzing Cultural Heritage using Portable Magnetic Resonance. The Analysis of the conservation of Roman Urn with Er:YAG laser at 2.94 μm , Volterra, Italy,

June, 2008, Boston Museum of Fine Arts, The Conservation of the frescos of the Compositanto Monumantle. Lecture. Boston, MA.

April, 2008, University of Pisa, Introduction to the use of Er: YAG laser in removal of encrustation from Painted Surfaces. Dept.of Analytic Chemistry, Pisa, Italy

March, 2008, Il Campostanto di Pisa. Un Progetto di Restauro Integrato. Pisa, Italy.

May, 2007, University of Pisa, Application of Laser radiation at 3 μm to painted surfaces. Dept. of Analytic Chemistry, Pisa, It.

Sept. 2006, US Naval Academy, The use of lasers in Fine Arts Conservation. lecture, Annapolis, MD.

April, 2006, Vatican Museums. Workshop in the use of Er: YAG laser. Vatican City, Italy.

October, 2005. Storstroms Konserveringscenter, Workshop and lectures and training in the use of the Er: YAG laser in Fine Arts Conservation. Naestved, Denmark.

June, 2004. American Institute for Conservation, Use of the Er: YAG laser on painted surface: Theory, Practice, laboratory samples., Portland, Or.

Sept. 2003. LACONA V, Lasers in the Conservation of Artworks. Er: YAG Laser Applications on Marble and Limestone Sculptures with Polychrome and Patina Surfaces. Osnabruck, GR.

May 2003. The Cloisters, Metropolitan Museum of Art. Workshop: Use of Er: YAG laser on 12thcenturly sculpture. New York City.

April 2003. New York University Institute of Fine Arts Conservation. Lecture. Use of the Er: YAG laser in Fine Arts Conservation, New York City

Sept. 2002. Duke University Museum of Art. Lecture: Use of lasers in Fine Arts Conservation, Durham, NC.

May 2001. Opificio delle Pietre Dure. Lecture: New Approach for Cleaning Painted Surfaces: The Erbium Laser. Sala de Buonamore, Conseravatorio, Musicale Statale "L. Cherubini", Florence, Italy.

May 10, 1999. NY Regional Conservation Association, Metropolitan Museum of Art. Introduction of the Er:YAG laser at 2.94 microns to remove encrustation on painted surfaces. New York City.

April, 1999. International Conference of the Conservation of Artworks, LACONA, III. Laser removal of containments from painted surfaces. Firenze, Italy.

Conservation Workshops

- June 6-11, 2013. University of Pisa. Presentation and training workshop in Cultural Heritage. Laser radiation at 2.94 μ m interaction with colorants. Pisa, Italy.
- January 28- February 8, 2013, Union College, Training in application of lasers in fine arts conservation. Schenectady, NY.
- October 16-29, 2012. Isabella Stuart Gardner Museum
Workshop and training in Er: YAG laser methods in Fine Arts Conservation. Boston, MA.
- March – April, 2009, Boston Museum of Fine Arts, Conservation Workshop and Training, Method and Practice Er: YAG Laser. Conservation Department of the Boston Museum of Fine Arts. Boston, MA.
- March, 2007, Cooperativa Beni Culturali, Workshop and training in the use of the Er:YAG laser on painted surfaces. Spoleto, Italy.
- May, 2006. Soprintendente delle Belle Arte Genova, Illustrazione del laser a suo utilizzo e visitare il Lab. Restauro. Genova, Italy.
- April, 2006. Institute of Conservation, Netherlands, Lecture and Workshop The use of Er: YAG laser in the removal of encrustations from painted surfaces. Bussum, Netherlands.
- Feb. 2005. Philadelphia Museum of Art. Workshop: Use of the high-power Er: YAG laser on sculpture surfaces. Philadelphia, PA.
- Jan. 2005. Olana State Historic Site. Workshop: Cleaning test with laser on Court Hall Stenciles. Hudson, N. Y.
- Oct. 2004. Buffalo State University Art Conservation Department, Lecture and Workshop: Use of lasers in Fine Arts Conservation. Buffalo, NY.
- April, 2004. New York State Bureau of Historic Preservation. Lecture and Workshop, Use of laser radiation at 3 μ m in Fine Art Conservation. Peebles Island (Albany), NY.
- Dec. 2003. Winterthur/University of Delaware, Graduate School of Art application of Er:YAG laser on painted surfaces. Winterthur Museum and Country Estates, Del.
- March 2003. North Carolina Museum of Art. Workshop in use of Er: YAG Laser on 16th century painting by Tintoretto. Raleigh, NC
- June 2001. Vatican Museums, Curatorial and Conservation Departments. Lecture and 3 weeks workshop: Research and Testing of the Er: YAG Laser on painted surfaces. Vatican City, Rome, Italy.

Invited Posters

- DeCruz, A., Andreotti, A., Convegno APLAR 5, Cita' del Vaticano, Rome. Il Restauro di un'urna Romana Mediante Laser Er:YAG. Sept. 18-19, 2014.
- De Cruz , A., Andreotti, A., 'The Restoration of a Roman Urn with the Erbium: YAG Laser. Science in the Service of Art', LACONA X, The Tenth Conference on Lasers in the Conservation of Artworks, American University of Sharjah, United Arab Emeritz. June 9-13 2014,
- DeCruz, A. Fitzpatrick Institute for Photonics. FIP Symposium. Laser ablation at 2.94 μ m: the restoration of a Roman Urn. March 11-12, 2014.
- DeCruz, A., Andreotti, A., Ceccarini, A., Colombini, M.P., Mass Spectrometry and Chromatography Conferenc. Primaziale Pisana, Pisa, Italy.

- Er:YAG laser cleaning of works of art: evaluation of the thermal effects.
June 5, 2013
- DeCruz, A., *Frontiers in Optical Imaging: CMBI*, Duke University. The Restoration of a Roman Urn with the Er:YAG Laser. December 10, 2012.
- DeCruz, A., *The Role of Photonics in Fine Arts Conservation. Symposium on Frontiers in Photonics: Science and Technology.* Fitzpatrick Institute for Photonics, Duke University, Durham, NC. October 6, 2009.
- Caponi, G., DeCruz, A., Columbini, M.P. and Matteini, M. *Congress: Un Progetto di Restauro Intergratto, Evaluation of the Cleaning Methods of the Buonamico Buffalmacco frescos.* Opera della Primaziale Pisana, Pisa, Italy, March 6-8, 2008.
- DeCruz, A., Andreotti, A. and Columbini, M.P., *Er:YAG Laser in the Cleaning of Frescos.* Congress: Un Progetto di Restauro Intergartto, Opera della Primaziale Pisana, Pisa, Italy, March 6, 2008.
- Sansonetti, A., Camaiti, M., Matteini, M., Striova, J., Castellucci, ,E.M., Andreotti, A., Colombini, M.P. and de Cruz, A. *The potential of the Er:YAG laser in cleaning of mural paintings.* Aplar 2: 2nd National congress on the laser applications in cleaning of artwork, Siena, Italy, 4 July 2008.
- DeCruz, A., Andreotti, A., Colombini, M.P. , Castellucci, E.M. , Striova, J., Matteini, M., Sansonetti, A. , *12th Laser Conference on Laser Optics,* St.Peterburg, Russia, *Design of a research program on the effects of Er:YAG Laser Radiation on Mural Painting: Preliminary results on the case study of the "Cimitero Monumentale."* Pisa, Italy, June 26-30, 2006
- Camaiti, M. , Castellucci, E. , DeCruz, A. ,Matteini, M., Sansonetti, Striova, *The Interaction of Er:YAG laser with organic materials used in conservation of mural painting XXII,* National Congress of Italian Chemical Society, Florence, September 16, 2006, p.55.
- DeCruz, A., Wolbarsht, M. L. and Hauger, S. A. *The Introduction of Lasers as a Tool in Removing Contaminants from Painted Surfaces.* International Congress: Art et Chimie la Couleur. Louver Museum, Paris. Sept. 18-21, 1998.