

## Kuen Y. Lin

Professor, Department of Aeronautics and Astronautics  
University of Washington, Seattle, WA

Degrees	<p><b>Ph.D.:</b> Massachusetts Institute of Technology, 1977 <b>MSAA:</b> Massachusetts Institute of Technology, 1973 <b>BSME:</b> National Taiwan University, 1969</p>
Current Position	<p><b>Professor:</b> September 1991- Present <b>Associate Professor:</b> September 1986- July 1991 <b>Associate Professor (WOT):</b> January 1984- July 1986</p>
Research Interests	<p>Composite Materials, Probabilistic Structural Analysis, Computational Solid Mechanics, Fracture Mechanics</p>
Honors and Awards	<p>Excellence in Engineering Education Collaboration Award (with Boeing LTD), American Society for Engineering Education (ASEE), 2011</p> <p>CUX Excellence Award on UW-Boeing Aircraft Composite Certificate Program, (with Boeing LTD), 2007</p> <p>Technical Excellence Award, National Association of Asian American Professionals, November 2005</p> <p>American Institute of Aeronautics and Astronautics (AIAA) Certificate of Appreciation, 2006, 1991</p> <p>Professor of Year Award, Department of Aeronautics and Astronautics, University of Washington, June 2001</p> <p>Professor of Year Award, Department of Aeronautics and Astronautics, University of Washington, June 1998</p> <p>American Institute of Aeronautics and Astronautics (AIAA) Associate Fellow, 1995</p> <p>Visiting Professorship, National Science Council, Taiwan 1993</p> <p>President Award, National Taiwan University, Taiwan 1969</p>
Selected Publications	<p>Cheung, C.H., Gray, P.G., and <b>Lin, K.Y.</b>, "Design and Optimization of an Axial Mode II Crack Arrest Specimen," Proc. of 53<sup>rd</sup> AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Honolulu, Hawaii, April 23-26, 2012.</p> <p>Bruun, E.D., Cheung C.H., Gray, P.M., and <b>Lin, K.Y.</b>, "Design and Experimental Validation of a Mixed-Mode Crack Arrest Specimen," Proc. of 53<sup>rd</sup> AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conf., Honolulu, Hawaii, April 23-26, 2012.</p> <p>Cheung, C.H., and <b>Lin, K.Y.</b>, "Numerical Analysis of Fastener Delamination/Disbond Arrest Mechanism in Aircraft Composite Structures," <i>Journal of Aircraft</i>, Vol. 49, March 2012.</p> <p>O'Mahony, T.K., Vye, N.J., Bransford, J.D., Sanders, E.A., Stevens, R., Stephens, R.D., Richey, M.C., <b>Lin, K.Y.</b>, and Soleiman, M.K., "A Comparison of Lecture-Based and Challenge-Based Learning in a Workplace Setting: Course Designs, Patterns of Interactivity, and Learning Outcomes," <i>The Journal of the Learning Sciences</i>, 21: pp. 182–206, 2012.</p> <p>Cheung, C.H., Gray, P.G., and <b>Lin, K.Y.</b>, "Fastener as Fail-Safe Disbond/Delamination Arrest for Laminated Composite Structures," Proc. of 18<sup>th</sup> Inter. Conf. on Composite Materials (ICCM18), Jeju Island, Korea, Aug. 21-26, 2011.</p> <p>Gray, P.G., Cheung, C.H., and <b>Lin, K.Y.</b>, "Design Tool for Laminated Composite Structures Disbond Arrest Mechanism," Proc. of SAMPE 2010, Seattle, WA, May 17-20, 2010.</p>

Cheung, C.H., Gray, P.G., and **Lin, K.Y.**, "Analysis of Fasteners as Disbond Arrest Mechanism for Laminated Composite Structures," Proc. of 51<sup>st</sup> AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Orlando, FL, April 12-15, 2010.

Cheung, C.H., and **Lin, K.Y.**, "Reliability of Damage Tolerance Composite Structure Using Fasteners as Disbond Arrest Mechanism," Proc. of 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Palm Springs, CA, May 4-7, 2009.

Tajima, S., and **Lin, K.Y.**, "Characterization of Aging Effects in Polymeric Composites Using X-ray Photoelectron Spectroscopy," Proc. of 3<sup>rd</sup> International Symposium on Advanced Fluid/Solid Science and Technology in Experimental Mechanics, Dec. 7-10, 2008, Tainan, Taiwan (keynote paper).

Styuart, A., **Lin, K.Y.**, and Livne, E., "Probabilistic Modeling of Structural/Aeroelastic Life Cycle for Reliability Evaluation of Damage Tolerant Composite Structures," Proc. of Inter. Council of the Aeronautical Sciences (ICAS) 2008 Congress, Anchorage, Alaska, Sept. 14-19, 2008.

Styuart, A., Demasi, L., Livne, E., and **Lin, K.Y.**, "Probabilistic Modeling of Aeroelastic Life Cycle for Risk Evaluation of Composite Structures," Proc. of 10th AIAA Non-Deterministic Approaches Conf., Schaumburg, Illinois, April 7-10, 2008.

Styuart, A., Cheung, C.H., and **Lin, K.Y.**, "Reliability-based Evaluation of the Damage Growth in Composite Structures," Proceedings of the 10th AIAA Non-Deterministic Approaches Conference, Schaumburg, Illinois, April 7-10, 2008.

Styuart, A., and **Lin, K.Y.**, "Selection of Certification Tests for Composite Structures Using Optimal Statistical Decision," Proc. of the 10th AIAA Non-Deterministic Approaches Conference, Schaumburg, Illinois, April 7-10, 2008.

Cheung, C.H., Styuart, A., and **Lin, K.Y.**, "Reliability of Composite Structures with Damage Growth Consideration" Proc. of American Society for Composites 22<sup>nd</sup> Annual Technical Conference, Seattle, WA, Sept. 17-20, 2007.

**Lin, K.Y.**, and Styuart, A., "Probabilistic Approach to Damage Tolerant Design of Aircraft Composite Structures," Journal of Aircraft, Vol. 44, No. 4, July 2007.

Styuart, A., and **Lin, K.Y.**, "Maintenance Planning for Aircraft Damage Tolerant Composite Structures based on Risk Assessment," Proceedings of the 9th AIAA Non-Deterministic Approaches Conference, Hawaii, April 23-26, 2007.

Richey, M., **Lin, K.Y.**, and Mohaghegh, M., "A Blended Academia-Industry Learning Model for Aircraft Composite Structures Education," Proceedings of the 48th AIAA Structures, Structural Dynamics, and Materials Conference, Hawaii, April 23-26, 2007.

Styuart, A., Mor, M., Livne, E., and **Lin, K.Y.**, "Risk Assessment of Aeroelastic Failure Phenomena in Damage Tolerant Composite Structures," Proceedings of the 9th AIAA Non-Deterministic Approaches Conference, Hawaii, April 23-26, 2007.

**Lin, K.Y.**, and Styuart, A., "A Probabilistic Approach to Damage Tolerance Design of Aircraft Composite Structures," Proceedings of 47<sup>th</sup> AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, & Materials Conference, Newport, RI, May 1-4, 2006.

**Lin, K.Y.**, and Styuart, A., "A Reliability Method for Assessing Damage Severity in Composite Structures," Proceedings of SAMPE 2006 Conference, Long Beach, CA, April 2006.

Huang, C., and **Lin, K.Y.**, "A Method for Reliability Assessment of Aircraft Structures Subject to Accidental Damage" Proc. of The 46th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, & Materials Conference, Austin, TX, April 2005.

Richey, M., **Lin, K.Y.**, and Maguire, R., "An Industrial Perspective of Composite Design and Education" Proceedings of The 6<sup>th</sup> China/Japan/US Joint Conference on

Composites, Chongqing, China, June 21-23, 2004.

Taylor, D., and **Lin, K.Y.**, "Aging Effects on the Interlaminar Shear Strength of High Performance Composites," *Journal of Aircraft*, Volume 40, No. 5, 2003, p.971-976.

Rusk, D.T, **Lin, K.Y.**, Swartz, D.D, and Ridgeway, G.K., "Bayesian Updating of Damage Size Probabilities for Aircraft Structural Life-Cycle Management," *Journal of Aircraft*, Volume 39, No. 4, July 2002, p.689-696.

**Lin, K.Y.**, Rusk, D.T., and Du, J., "Equivalent Level of Safety Approach to Damage Tolerant Aircraft Structural Design," *Journal of Aircraft*, Vol. 39, No. 1, Jan. 2002, pp.167-174.

Ohno, S., **Lin, K.Y.**, Lee, and Ohuchi, F., "Surface Characterization of IM7/5260 Composites by X-ray Photoelectron Spectroscopy," *Journal of Vacuum Science & Technology*, Vol. 19, Issue 4, July 2001, pp. 1116-1120.

**Grants & Contracts**

PI or Co-PI on numerous grants and contracts from NASA, FAA, Boeing, etc. Total research funding to date: more than \$7,000,000.

**Professional Memberships**

American Institute of Aeronautics and Astronautics (Associate Fellow)  
American Society for Engineering Education

**Selected Professional Service**

AIAA Structures Technical Committee, 2003- 2006.

Director (founding), UW/Boeing "Aircraft Composite Structural Analysis and Design" Certificate Program, University of Washington, 2004- present

Co-Director (founding), AMTAS-Advanced Materials for Transport Aircraft Structures, University of Washington, 2004- present

Session Organizer, "Structures and Education", 48th AIAA/ASME/ASCE /AHS/ASC Structures, Structural Dynamics, & Materials Conference, Hawaii, April 23-26, 2007.