

CURRICULUM VITAE

Hou-min Chang

ADDRESS

HOME 3410 Redbud Lane, Raleigh, North Carolina, 27607
TEL: (919) 787-4183 FAX: (347) 426-0497

OFFICE: Department of Wood and Paper Science
Box 8005, North Carolina State University
Raleigh, North Carolina 27695-8005
TEL: (919) 515-7712 FAX: (919) 515-6302

PERSONAL DATA:

BORN: August 29, 1938 in Taiwan, China
MARITAL STATUS: Married, two children
CITIZENSHIP: U.S.A. (Naturalized in October 1972)

HIGHER EDUCATION:

National Taiwan University	Forestry	B. Ag.	1962
University of Washington	Organic Chemistry	M.S.	1966
University of Washington	Wood Chemistry	Ph.D.	1968

EMPLOYMENT:

1965-1968 Research Assistant - University of Washington
1968-1969 Postdoctoral Fellow - North Carolina State University
1969-1973 Assistant Professor - North Carolina State University
1973-1977 Associate Professor - North Carolina State University
1976 Scientific Specialist - Weyerhaeuser Company (on leave from NCSU)
1977-1990 Professor - North Carolina State University
1981 Visiting Professor - University of Tokyo, Japan (on leave from NCSU)
1998 Visiting Professor - Kyoto University, Japan (on leave from NCSU)
1990 -2005 Reuben B. Robertson Distinguished Professor of Pulp and Paper Science and
Technology, North Carolina State University
2005 to date Professor Emeritus, North Carolina State University
2006 to date Special Professor, Nanjing Forestry University (3 months per year at NJFU)

SOCIETY MEMBERSHIPS AND ACTIVITIES:

American Chemical Society, Sigma Xi, TAPPI, Xi Sigma Pi, Phi Kappa Phi,
TAPPI : Chairman, Wood Chemistry Committee 1980-81; Board of Directors, 1999-2002
ACS: Program Chairman, Cellulose, Paper & Textile Division 1979-81

HONORS:

Sigma Xi Research Award 1974 Fellow, International Academy of Wood Science, 1982 NCSU
Alumni Association Outstanding Research Award, 1985
TAPPI Research and Development Division Technical Award, 1992
NCSU Alumni Association Alumni Distinguished Professor for Graduate Teaching, 1993, 1994
TAPPI Fellow, 1999
Notable Achievement Award, International Symposium on Wood, Pulp and Fiber Chemistry,
2007

LIST OF PUBLICATIONS

US PATENTS

1. Jividen, G. M., H-m Chang, R. H. Reeves, and C. L. Chen, 1978, Process for Obtaining Seed Hull Commodities Including Cellulosic Fibers and Xylitol, US Patent 4,087,316.
2. Eaton, D. C., T. K. Kirk and H-m Chang, 1983, Process for the Decolorization of Pulp Mill Bleach Plant Effluent, US Patent 4,420,369.
3. Chang, H-m., V. B. Huynh, T. W. Joyce and T. K. Kirk, 1985, Process of Degrading Chlorinated Organics by White-Rot Fungus, US Patent 4,554,075.
4. Chang, H-m., T. W. Joyce and T. K. Kirk, 1987, Process of Treating Effluent from a Pulp or Papermaking Operation, US Patent 4,655,926.
5. Chang, H-m., H. Jameel and G. E. Seger, 1993, High Efficiency Two Step, High Low pH Chlorine Dioxide Pulp Bleaching Process, US Patent 5,268,075
6. Chang, H-m., Tien-Wang Wu, and J. A. Heitmann, 1996, Deinking of Xerographic Printed Wasterpaper Using Long Chain Alcohol, US Patent 5,500,082
7. Chang, H-m., H. Jameel, J-F. Song, D. Pan, B. Amini, JR. Webster and B. E. Evans, 1996, Process for Preparing a Bleaching Liquor Containing Percarboxylic and Caro's Acid, US Patent 5,589,032
8. Chang, H-m., H. Jameel, J-F. Song, D. Pan, B. Amini, JR. Webster and B. E. Evans, 1997, Method of Oxidatively Treating a Substrate with an Equilibrium Mixture of Caro's Acid and a Percarboxylic Acid, US Patent 5,693,185

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2. Higuchi, T., H-m. Chang, and T. K. Kirk, 1983, Recent Advances in Lignin Biodegradation Research, Uni Publishers Co., Ltd., Tokyo, Japan.
3. Kirk, T. K. and H-m. Chang, 1990, Biotechnology in Pulp and Paper Manufacture, Applications and Fundamental Investigations, Butterworth-Heinemann, Boston, MA.

BOOK CHAPTERS

1. Chang, H-m. and G. G. Allan, Oxidation, In "Lignins" Edited by K. V. Sarkanen and C. H. Ludwig, Wiley-Interscience, New York, 1971, 433-485.
2. Chang, H-m., C. L. Chen, and T. K. Kirk, 1980 Chemistry of Lignin Degraded by White-Rot Fungi, in Lignin Biodegradation: Microbiology, Chemistry and Potential Applications, edited by T. K. Kirk, T. Higuchi and H-m. Chang, CRC Press, Inc., Boca Raton, Florida, Vol. I, pp. 215-229.

3. Kirk, T. K., T. Higuchi, and H-m. Chang, **1980**, Lignin Biodegradation: Summary and Perspectives in "Lignin Biodegradation: Microbiology, Chemistry and Potential Application" edited by T. K. Kirk, T. Higuchi and H-m. Chang, CRC Press, Inc., Boca Raton, Florida, Vol. II, pp. 235-243.
4. Chang, H-m., and J. S. Gratzl, **1980**, Ring Cleavage Reactions of Lignin Models with Oxygen and Alkali, in Chemistry of delignification with Oxygen, Ozone, and Peroxides, edited by J. S. Gratzl, J. Nakano and J. P. Singh, Uni Publishers Co., Tokyo, Japan, pp. 151-163.
5. Tai, D., M. Terazawa, C. L. Chen, H-m. Chang and T. K. Kirk, **1983**, Biodegradation of Guaiacyl and Guaiacyl-Syringyl Lignins in Wood by Phanerochaete chrysosporium, in "Recent Advances in Lignin Biodegradation Research", edited by T. Higuchi, H-m. Chang and T.K. Kirk, Uni Publishers Co., Ltd., Tokyo, Japan, pp. 44-63.
6. H-m. Chang, T. W. Joyce, and A. G. Campbell, E. D. Gerrard, Van-Ba Huynh, and T. K. Kirk, **1983**, Fungal Decolorization of Bleach Plant Effluents, in "Recent Advances in Lignin Biodegradation Research", edited by T. Higuchi, H-m. Chang and T. K. Kirk, Uni Publishers, Co., Ltd., Tokyo, Japan, pp. 257-268.
7. Joyce, T. W., H-m. Chang, A. G. Campbell, Jr., E. D. Gerrard and T. K. Kirk, **1984**, A Continuous Biological Process to Decolorize Bleach Plant Effluents, Biotech. Adv. Vol. 1, pp. 301-308 (Pergamon Press Ltd., London).
8. Chen, C.-L., and H-m. Chang, **1985**, Chemistry of Lignin Biodegradation, in Biosynthesis and Biodegradation of Wood Components edited by T. Higuchi, Academic Press, Inc., New York, NY, pp. 535-556.
9. Guo, H., H-m. Chang, T. W. Joyce and J. Glaser, **1990**, Degradation of Chlorinated Phenols and Guaiacols by the White-Rot Fungus Phanerochaete chrysosporium, in Biotechnology in Pulp and Paper Manufacture, Applications and Fundamental Investigations, edited by T. K. Kirk and H-m., Chang, Butterworth-Heinemann, Boston, MA, pp. 223-230.
10. Yin, C.-F., T. W. Joyce, and H-m. Chang, **1990**, Dechlorination of Conventional Bleaching Effluent by Sequential Biological Treatment, in Biotechnology in Pulp and Paper Manufacture, Applications and Fundamental Investigations, edited by T. K. Kirk and H-m. Chang, Butterworth-Heinemann, Boston, MA, pp. 231-244.
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13. Chang, H-m., **1992**, Isolation of Lignin from Pulp, in Methods in Lignin Chemistry edited by S. Y. Lin and C. W. Dence, Springer-Verlag, Berlin Heidelberg, pp.71-74

14. Fukui, H., T. L. Presnell, T. W. Joyce and H-m. Chang, **1992**, Decolorization and Detoxification of Kraft Ep Effluent by *Phanerochaete chrysosporium*, in Biotechnology in Pulp and Paper Industry edited by M. Kuwahara and M. Shimada, UNI Publishers Co., Ltd., Tokyo, pp.75-80
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16. R. A. Venditti, H-m. Chang, R. D. Gilbert, **1999**, Stickies Measurement Based on Deposition Used at North Carolina State University, in "Paper Recycling Challenge: Volume IV, Process Control & Mensuration", Ed. M. Doshi and J. Dyer, Progress in Paper Recycling, Appleton WI, pp. 103-104
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19. Balakshin, M. Y., E. A. Capanema and H-m. Chang, **2008**, Recent Advances in the Isolation and Analysis of Lignin and Lignin-Carbohydrate Complexes, in Characterization of Lignocellulosic Masterials, T. Q. Hu, editor, Blackwell Publishing, Ames, IW, 2008, pp. 148-170

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12. Chang, H-m., J. S. Gratzl and W. T. McKean, 1974, Delignification of High-Yield Pulps with Oxygen and Alkali; Progress and Prospects, *Tappi* 57 (5): 123-126.
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