

## BIOGRAPHICAL SKETCH

Masood Akhtar, CEO, Biopulping International, Inc.  
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**EDUCATION AND TRAINING:** Post-Doctoral Associate, Ohio State University, Columbus Ohio 1986. Ph.D. 1985, Aligarh Muslim University, India (Botany-Microbiology)

**RESEARCH AND PROFESSIONAL EXPERIENCE:** Biopulping International, Inc. Madison, Wisconsin, CEO. Founded in 1996 to research, develop, commercialize, and market energy-efficient and environmentally friendly technologies for the energy-intensive and renewable energy industries; CleanTech Partners, Madison, Wisconsin, President. Founded in 2002 to accelerate the deployment of energy-efficient and renewable energy technologies in Wisconsin, and University of Wisconsin and USDA Forest Service, Forest Products Laboratory, Madison, Wisconsin, Project leader (1989-1996). Led the Biopulping Consortium team (Universities/federal/worldwide private companies) that developed energy saving (biopulping) technology. Received the 1997 USDA Honor Award for Environmental Protection for developing biopulping technology. The award was presented by the U.S. Department of Agricultural Secretary on June 11, 1997 in Washington, D.C. Also received the 1998 Federal Laboratory Consortium Award and the 1998 U.S. Forest Service Chief's awards for Excellence in Technology Transfer. Received the 2001 and 2002 Wisconsin Small Business Innovation Award for Outstanding Achievements by the Wisconsin Small Business Innovation Consortium. In 2003, selected as a Fellow by the International Academy of Wood Science, UK. Election is regarded as a very high honor in the science community.

**PUBLICATIONS** (Over 35 publications in the field of energy): Ben Thorp and M. Akhtar (2007). Innovation without proper deployment is a waste. Paper 360, pages 16-20, January, 2007; Kenealy, W., E. Horn, M. Akhtar, J. Laplaza, T. Jefferies. (2005). *A New Biorefining Vapor Treatment to Generate Chemicals and Paper from Wood Chips*. International Chemical Congress of Pacific Basin Societies (Pacifichem), Honolulu, Hawaii, December 15-20, 2005; Kenealy, W. J. Klungness, M. Tshabalala, E. Horn, M. Akhtar, R. Gleisner, G. Buschle-Diller (2004). *Laccase Modification of the Physical Properties of Bark and Pulp of Loblolly Pine and Spruce Pulp*. American Chemical Society (ACS) Chapter 7, 2004; Klungness, J.H., Gleisner, R., Akhtar, M., Horn, E., Lentz, M., (2003). *Synthesis of pulping process with fiber loading methods for lightweight papers*. TAPPI Technical Conference Proceedings. October 26-30, Chicago, IL, 2003; Swaney, R. M. Akhtar, E. Horn, M. Lentz, C. Houtman, J. Klungness (2003). *Commercialization of BioPulping: An Energy-saving and Environmentally-friendly Technology for the Paper Industry*. TAPPI proceedings, 2003; Swaney, R., Akhtar, M., Horn, E., lentz, M., Klungness, J.H., and Sabourin, M., Oxalic acid pretreatment for mechanical pulping greatly improves paper strength while maintaining scattering power and reducing shives and triglycerides. In *2003 Tappi Technical Conference Proceedings*, Oct. 27-30, Chicago, IL. Atlanta, GA. TAPPI Press.

**PATENTS:** 11 patents-all related to developing energy saving and Biorefinery technologies

**SYNERGISTIC ACTIVITIES:** Substantial, research, development, commercialization, marketing, technology transfer, investment and management experience in the field of energy efficiency and renewable energy.

**RELATED EXPERIENCE:** Work as a consultant/advisor for other start up companies, such as Clean Earth Solutions and Pla2fuel-both are developing technologies to produce liquid transportation fuels from municipal solid waste and recycled plastics, respectively. Also advise paper companies, such as Stora Enso (second largest producer of pulp and paper in the world) and Flambeau River Paper (start-up company) on energy efficiency and renewable energy technologies and potential funding opportunities with particular focus on biomass gasification and production of liquid transportation fuels from syngas.

On Congress's request in 2004, testified before the committee on biobased industry. In 2005, organized the Governor's Summit on Biobased Industry in Wisconsin. In September 2005, appointed on the Forest Research Advisory Committee by the US Department of Agriculture Secretary to advise the Secretary concerning forestry research administered and undertaken by the USDA. Also serve on the Agenda 2020 committee and the American Forest & Paper Association/TAPPI/Forest Products Laboratory liaison committee. To promote energy efficiency and renewable energy, organized the 2006 International Forum on Energy. In 2006, established a Biorefinery deployment Collaborative to build private and public institutional readiness to participate in the U.S. bioeconomy with focus is on deployment. Members include forest products industry, ethanol producers, technology developers, service providers, and several universities and federal institutions. Establishing a Woody Biomass Commodity Exchange as a means to increase the efficiency of supply chain providing biomass to the existing biobased fuels industries and the emerging concept of the forest Biorefinery.

**CURRENT AND PENDING SUPPORT (federal and non federal)**

Federal, Agency Making Award	Title of the proposal	Grant amount	Ending date	Time commitment (%)
DOE	Overcoming the recalcitrance of cellulosic biomass	\$1,521,763 Non federal match \$1,145,223	12/31/2009	10
DOE	First commercial scale demonstration of oxalic Acid technology	\$525,000 Non federal match \$1,314,000	12/31/2007	5
USDA	A novel process for converting wood chips into improved composite boards, chemicals and fuels	\$80,000	12/31/2007	8
USDA	Improving the conversion of wood to ethanol	\$149,047 Non federal match \$147,543	6/30/08	2.5
Non-federal: State	Commercialization of energy saving technologies	\$10,005,035	12/31/2008	60
Non-federal: industry	Biorefinery Deployment Collaborative	\$250,000	6/30/2008	2.5
Non-federal: industry/state	Woody Biomass Commodity Exchange	\$385,000	6/30/2009	2.5
DOE	Project Independence: Construction of an Integrated Biorefinery for Production of Renewable Biofuels at an Existing Pulp and Paper Mill	\$30,000,000 Non federal match \$33,653,212	Pending	5

In the past, received many grants from several agencies, including the DOE USDA/SBIR and Wisconsin Department of Commerce to commercialize energy saving technologies. Pulp and paper and related industry \$375,000; University of Wisconsin \$ 82,552; United States Department of Agriculture Competitive Grant \$ 155,817; Energy Center of Wisconsin \$ 230,000; Energy Center of Wisconsin \$ 127,459; Clariant (Sandoz) Corporation \$50,000; Cooperative Research and Development Program \$ 66,000; UPM-Kymmene, Finland \$7,500; Recycling Market Development Board, Department of Commerce, \$10,000; Small Business Innovation Grant/USDA (Phase 1)-\$70,000.