



J.Y. Zhu: Adapting and transforming the industry

Editor's Note: *This month, we continue our series of columns profiling the background and expertise of TJ's editorial board members. These volunteer members spend long hours overseeing the peer review process and contributing to TJ. TAPPI would like to express its gratitude to the editorial board members for their hard work and willingness to share their expertise with the forest products community.*

– Monica Shaw, Editorial Director

At the U.S. Forest Service, Forest Products Laboratory, in Madison, WI, USA, *TAPPI Journal (TJ)* editorial board member JunYong (J.Y.) Zhu leads teams of scientists, engineers, and graduate students in research fields with the potential to transform the pulp and paper industry. This research involves advancing the science and engineering of the forest biorefinery, the production of fiber and advanced cellulose nanomaterial and lignocellulose-based bioproducts, and conservation in wood and fiber utilization.

Adapting and transforming are familiar concepts for J.Y., who is originally from Kunshan, China. After receiving a Ph.D. in Engineering in 1991 from the University of California-Irvine, J.Y. worked in Silicon Valley, but decided to pursue a job outside the high-tech defense industry. He accepted a faculty position with the Institute of Paper Science and Technology (IPST) many miles away in Atlanta, GA – a city he still calls home along with Kunshan and Madison – where he stayed for nearly 10 years. At IPST, he advised more than a dozen graduate students to successful completion of their Ph.D. and M.S. degrees and also directed post-doctoral research fellows and international visiting scholars.

In early 2003, J.Y. took another big move to pursue an opportunity with the Forest Products Laboratory in Madison, where he is now scientific team leader. He is also an adjunct professor in the Department of Biologi-



J.Y. Zhu catches white bass on the Wisconsin River in Sauk City, WI.

cal Systems Engineering at the University of Wisconsin-Madison.

In addition to writing book chapters on bioenergy and biomaterials topics, J.Y.'s research has appeared in more than a dozen journals, representing over 120 published items on topics that include bioenergy, biotechnology, nanocellulose, recycling, pulping, and environmental science. He also recently co-edited a book on *Sustainable Production of Fuels, Chemicals, and Fibers from Forest Biomass*.

J.Y. became an editorial board member for *TJ* in 2009. In addition to his regular activities of seeing papers through the peer review process, J.Y. has organized two special issues of *TJ*: a Forest Biorefinery issue (May 2011) and a Paper and Bioprocess Engineering issue (January 2012), featuring research from that department at the State University of New York, College of Environmental Science and Forestry (SUNY-ESF), and co-organized with Gary M. Scott, professor and chair of the department.

“Participating as an editorial board member and technical editor with *TJ* allows me to gain firsthand information about all aspects of forest products research,” J.Y. said. “It has also taught me how to treat other people’s work in an impartial, objective, and respectful way.”

“University of TAPPI”

J.Y. enjoys building friendships with collaborators, colleagues, and co-workers, so TAPPI membership offers a natural fit for his professional and personal goals. Since joining TAPPI in 1994, he has served in several positions on the Fluid Mechanics Committee, including chair from 1996-1998 and 2003-2006. He will be working with the committee to create a special Fluid Mechanics issue of *TJ* next year.

In addition, J.Y. has served as an executive committee member for the TAPPI Biorefinery Committee since 2008 and has been a member of the Steering Committee for the TAPPI PEERS Conference since 2010. In 2006 and 2012, he was task chair for TAPPI Test Method TAPPI T282 pm – 07, a procedure for determining the hexenuronic acid (HexA) content of chemical pulp that he developed.

Overall, J.Y. finds his involvement with TAPPI provides a valuable opportunity to learn and achieve professional goals.

“TAPPI is truly a University where you get educated, equipped, and networked,” J.Y. described. “You are also provided with challenges and opportunities that help in achieving your career goals and success, as well as making an impact in this industry and in society.”

Adapting and transforming the industry

J.Y.’s Ph.D. dissertation on “Coherent Anti-Stokes Raman Spectroscopy (CARS) for non-intrusive, time-dependent, and spatially resolved temperature measurements in gas turbine combustion” was not related to the field of pulp and paper science. He uses it as an example of how individuals can adapt their education and innate skills to become successful in a different area than they may have initially imagined, as he has with pulp and paper.

The example also mirrors the opportunity J.Y. sees in the potential to adapt the industry’s traditional expertise and move into new end markets with the forest

biorefinery and advanced cellulose-based nanomaterials and biobased products. Though he sees the potential for industry transformation in these areas, he notes the challenges to overcome through diligent research, such as how to convert a traditional pulp mill into an economically viable biorefinery with no waste.

On a personal note, J.Y. is an avid outdoorsman and gardener. While he sometimes misses the weather and flowers of his second hometown, Atlanta, he has found plenty of fishing, hiking and other outdoor activities in Madison, where he volunteers as an assistant scout master with the Boy Scouts of America. **TJ**