

CURRICULUM VITAE
SOKHANSANJ, Shahabaddine

ACADEMIC CREDENTIALS:

B.Sc., University of Tehran, Department of Agricultural Engineering, Power and Machinery (1966)

M.Sc., Michigan State University, Department of Agricultural Engineering, bio-process engineering (1974)

Ph.D., Michigan State University, Department of Agricultural Engineering, bio-process engineering (1977)

OTHER CREDENTIALS:

Certificate, University of Iowa, College of Engineering, Management Engineering (1970)

Certificate, University of Minnesota, Department of Civil Engineering, Structural Design and Analysis; steel design, concrete design, structural analysis for credit, architectural design audit (1979).

Completed General Engineering Examinations (PE) in the State of Minnesota (1978)

Registered Professional Engineer (P.Eng.) in the Province of Saskatchewan (1980-2002), Province of British Columbia (2002-)

APPOINTMENTS AND PROMOTIONS:

Assistant Professor, University of Saskatchewan, (July 1, 1979)

Associate Professor, University of Saskatchewan, (July 1, 1983), Tenured (July 1, 1983)

Professor, University of Saskatchewan, (July 1, 1987)

Adjunct Professor, University of Tennessee (March 2001)

Senior Research Staff, Oak Ridge National Laboratory (January 1, 2001)

Distinguished Research Staff, Oak Ridge national Laboratory (October 1, 2001)

Professor Emeritus, University of Saskatchewan (July 2002)

Adjunct Professor, University of British Columbia (October 2002)

PROFESSIONAL CONTRIBUTIONS

1. GENERAL

My professional goal is to contribute to the development of engineering solutions for processing of biomaterials for energy, food, feed, and fiber. Concurrent efforts for accomplishing this goal include conducting basic and applied research in engineering sciences; communicating acquired knowledge to peers for validation and to industry for commerce; and contributing to the development of highly qualified graduates through intense mentoring. Ensuring safety, affordability, zero environmental footprints and increasing efficiency are my guiding principles. I am interested in a systems approach to engineering challenges and dedicated to understanding physical and chemical properties of materials originating from living organisms. My earlier work was on cereal grains, oilseeds, and pulses and later expanded to forages and other natural fibers. My recent work is in feedstock engineering for bioenergy focusing on harvesting, drying, fractionating, and densification of cellulosic biomass. These processes add value to an otherwise low value commodity. The work has evolved in two fronts: (1) experimenting with innovative biomass preprocesses to acquire engineering data for design and optimum operation of individual unit operations; and (2) developing engineering models for simulation of unit operations for optimizing the entire supply chains. These two research trusts and other contributions are briefly outlined in the following sections.

1.1 Biomass feedstock engineering and logistics modeling

Over the past eight years, I have initiated and led an active research program on biomass harvesting, drying, and densification for the production of energy and bio-based products. This research has resulted in the highly successful modeling environment IBSAL (acronym for Integrated Biomass Supply Analysis & Logistics). This dynamic modeling environment is constructed on GIS spatial data, engineering processes, operations research, and real time climate data. A supply chain that consists of a sequence of operations is constructed from an ensemble of modules

available in a library. Each module is a mathematical simulation of a process or event. These processes or events include harvesting, densification, grinding, drying, and storing, transporting and materials handling. The elements of the IBSAL have been validated through publications in peer reviewed journals. Currently we are in the final phase of accreditation of the entire modeling environment in collaboration with a number of industrial partners.

- Supply analysis of stover, straw, switchgrass
- Sensitivity analysis of biomass supply options with respect to supply costs, energy input, and emissions.
- Evaluation of large scale integrated corn stover supply using wet and dry harvest and storage systems
- Supply logistics options for Mountain Pine Beetle Infested wood in Western Canada
- Biomass pelletization technologies and costs and transport logistics based on biomass particle size and density

1.2 Development and application of drying simulation models

I have made original contribution to the science and engineering of drying of agricultural materials through mathematical modeling, experimentation, verifications and applications. Earlier extensive work on drying of grains and crops led to the development of the ASAE Standard S448 "Thin-layer Drying of Grains and Crops". My research team revised and updated the ASAE D245 "Moisture Relations for Agricultural Based Products". In early 1990's I embarked on the development of a drying model for high temperature (>800°C) rotary dryers. Agriculture and Agrifood Canada was successful in using the simulation model in technical negotiations with Japan for removal of a ban on the import of untreated forage. A variation of the model was used by Saskatchewan Research Council for the development of a commercial baled hay dryer (Whitefox Dryer- Cremona, Alberta). The model was also used to test and develop a barn hay dryer for Dunlea Farm Ltd. of Ontario and later for several hay drying installations in western Canada. The rotary dryer model was further perfected for drying sawdust and shavings in connection with wood pellet research (Mani et al. 2007). During 1990's we developed a dehumidification drying systems for heat sensitive material especially those material used in pharmaceutical applications. The work of doctoral candidate Patil led to a book chapter entitled "Processing by Temperature Elevation in Thermal Processing of Bio-materials" (Ed: T. Kudra and C. Strumillo), Gordon and Breach Science Publishers, 1998. Doctoral candidate Khoshtaghaza developed a technique to predict the potential of molding of alfalfa cubes and compacted bales in transit. We also developed the pellet/cube durability tester "DURAL" for in-situ quality assessment of densified forages.

1.2 Dehulling and Splitting Technology

Decorticating and splitting of pulse crop seeds are among difficult milling operations because the seed hull has to be removed efficiently while the cotyledons (embryo) must remain intact with minimum breakage or surface scratches. My team of graduate students at U of S (Juming Tang, Jeff Hehn, R.T. Patil, Nayansingh Thakor) conducted a series of experiments on hydrothermal treatment of pulse crop with respect to post harvest processing and storage. In 1998, we designed and assisted the Canadian Select Grains Ltd. to install a chickpea splitting mill in Eston, Saskatchewan. Since then seven more mills have gone into operation in the area. Meanwhile, we have developed a new cone dehuller that is versatile for processing varying size seeds. The dehuller is under commercial testing and a scaled-up version is being built. Our dehulling work has been summarized in a published book chapter titled "Dehulling and splitting pulses Handbook of Postharvest technology, cereals, fruits, vegetables, tea, and spices (Ed: Chakraverty et al.) Marcel Dekker, Inc. New York. Pages 397-426, 2002.

2. TRAINING OF HIGHLY QUALIFIED PERSONNEL

2.1 M.Sc. theses supervised

Yazdanpanah, F. (2009), Stephen J. (2008), Jafari L. (2008), Chau J (2008), Mahmoudi (2008); Streeton (2005); Phani A. (2002), Faraji, H. (2001), Hakibu M. (2001), Kabgianian, B. (1999), Krishna, K. (1998), Yaoyu Li (1997), Angmai Xu (1997), Winter. P.W. (1997), Shreshta, B. (1996), Sandeep, S. (1995), Romaniuk, M. (1994), Wen Yin Li (1992), Hehn, J. (1991), Jawanda, K.S. (1985), Venkatesan, V.S. (1989), Falacinski, A. (1988), Bowen, G.C. (1983)

2.2 Ph.D. Theses supervised

Bijay Shreshta (2006) Senior R&D Staff, Heinz Controls, Saskatoon; **Sudhagar Mani** (2005) Assistant Professor University of Georgia, Athens, GA; **Yang, Weihua** (1998) Associate Professor University of Alabama, Tuscaloosa; **Khoshteghaza, Hadi** (1997) Associate Professor Modarress University, Iran. *Dr. Khoshteghaza's doctoral dissertation was selected to receive the 1997 CSAE graduate thesis award.* **Tabil, Jr., Lope G.** (1995) Professor and Head University of Saskatchewan. *Dr. Tabil's thesis was nominated for an NSERC thesis award.* **Patil, R.T.** (1995) Director Central Institute of Post Harvest Technology, Ludhiana, India; **Fasina, O.O.** (1994) Associate Professor Auburn University, Alabama; **Gu, Deqiang** (1993) Research Scientist Government of Canada, Saskatoon. **Thakor, Nayansingh** (1993) Professor Phule Agricultural University, India. **Lang, Weiguo** (1992) Entrepreneur Chairman of Q-net an international internet provider; **Tang, Juming** (1991) Professor Washington State University, Pullman, WA. **Jayas, Digvir** (1987) Associate Vice President & Professor, University of Manitoba.

2.3 Postdoctoral Research Associates (minimum one year)

Dr. Igathinathane (2008-), Dr. X. Kuang (2007-), Dr. Jian Jun (2007-2008), Dr. Jaya Shankar, (2006-), Dr. Mozammel Hoque (2006-2008), Dr. Sudhagar Mani (2005-2006), Dr. Amit Kumar (2005-2006), Dr. Attila Kovac (2000- 2001), Dr. X. Huang (2000 –2001), Dr. Lope Tabil (1995-1997), Dr. Ahmad Ghazanfari (1996-1997), Dr. Zhang Jianpeng (1996-1997), Dr. S. Deshpande (1994-1995), Dr. Edwin Arinze (1992-2001), Dr. Stephen Cenkowski (1986-1987), Dr. Takaharu Kameoka (1983-1984).

Summary of significant contributions to publications and training of highly qualified personnel

Year	Refereed Journal papers	Refereed proceedings	Book chapters	Non refereed proceedings	Graduate (M.Sc. & PhD.) thesis completed	Post doctoral & Res. Associates
2008	7			13	4	4
2007	5		1	12		3
2006	8	2		12	1	2
2005	6			7	2	1
2004	8	4	1	5		
< 2004	155		16	151	28	13

3. OUTREACH, EXTENSION, COLLABORATION

3.1 Service

President Canadian Society for Bioengineering (2006-2007); Chair Sea to Sky Branch of the Association of Professional Engineers and Geoscientist of BC (2005-2006), Chair Saskatchewan Section Canadian Food Science and Technology Institute (1986), Chair Solar Energy Society of Canada Saskatchewan, Chair TC 23/SC 7 Canadian Committee on harvest and preserving agricultural crops (1992-95). During my years in Saskatchewan, I established collaborations with the Canola Council of Canada, the Pulse Crop Development Board and Pulse Canada, the Canadian Hay Association (CHA), the Canadian Dehydrators Association (CDA), Saskatchewan Flax Commission, and Saskatchewan Nutraceutical Network. These organizations provided major funding and cost shares for research and graduate training. Since joining UBC in 2002, I have developed a close collaborative research with communities in British Columbia on biomass research and development. I was instrumental to develop a five year (2006-2011) collaborative research program with participation and funding from Wood Pellet Association of Canada, Agriculture & Agri-Food Canada, BIOCAP Foundation Canada, and UBC. I have also established the multi-disciplinary Biomass and Bioenergy Research Group (BBRG) at UBC. The BBRG has facilitated a two way communication between industry and university researchers in the emerging area of biomass and bioenergy .

3.2 Standards and Engineering Practice

ASAE D245.5 Moisture relations of plant-based agricultural products – leader, major revision.

ASAE D269.4 Cubes, pellets, and crumbles – Definitions and methods for determining density, durability, and moisture content – leader, major revision

ASAE S319.3 Methods of determining and expressing fineness of feed materials by sieving – leader, revision

ASAE S448 Thin Layer drying of grains and crops – leader, new standard development
ASAE S358.3 Moisture measurement – forages – participant, revision
ASAE S423.1 Thermal performance testing of solar ambient heaters – participant, new standard.
Chaired FPE03 Standards Committee of the ASAE- FPEI
Chaired T-13 ASAE International Standards Committee
Chaired Canadian Standards Council’s CSC//CSA/ISO/TC23/SC7 “Harvesting and Preservation”.
Current member ASAE Standards Council
Chair FPEI-ASABE.

3.3 International Activities

My international activities have involved training of graduate students and visiting scientists from abroad. I traveled to China in 1985, 1995 to present short courses at Inner-Mongolian College of Engineering. CIDA and CESO supported these activities. In 1997 and 2000, the Chinese Ministry of Agriculture supported a series of consultations on forage processing in China. We have established memorandum of agreements for scientific collaboration between the U of S and two institutions Beijing Agricultural University and Jiangsu University of Science and Technology. In 1995 I traveled to India to evaluate the pulse crop processing industry in that country. The development of the pulse crop processing industry in Saskatchewan has its impetus in this tour. I have also explored links between U of S and institutions in Egypt, India, and Morocco. I served as a member of Canada European Consortium on the development of food engineering exchange program. I also represented Canada at the ISO Standards on development of international grain dryer standards, and later participated in the in the United Nations International Marine Organization as a science adviser to the Canadian delegates. I have traveled frequently to Japan and participated in phytosanitary protocol negotiations between Agriculture & Agri-food Canada and Japan Ministry of Agriculture, Food, and Fisheries. In October 2008 I acted as an opponent (external Examiner) of Dr. Sylvia Larsson of the University of Agricultural Sciences (Uppsala) in Umea. Her doctoral thesis was on pelletization of Canary Grass.

3.4 Research collaborators

Professors Tony Bi, Jim Lim, Taraneh Sowlati (University of British Columbia), Professor Peter Flynn (University of Alberta), Professor Muhammad Afzal (University of New Brunswick), Professor John Cundiff (Virginia Tech); Professor Al Womac, University of Tennessee; Professor Mike Montross, University of Kentucky; Professor H.C. Wood, Electrical Engineering; Professor Sassani, Mechanical Engineering UBC; Professor Bi, Chemical & Biological Eng. UBC; Professor G.J. Schoenau, Mechanical Engineering, University of Saskatchewan; Professor Besant, Mechanical Engineering, University of Saskatchewan; Professor Ajay Dalai, Chemical Engineering, University of Saskatchewan; Drs. Bruce Coulman, Bruce Gossen, and Jay Whistlecraft, Agriculture and Agri-food Canada Research Center; Professor Robert Tyler, Department of Applied Microbiology and Food Science, University of Saskatchewan; Professor Digvir Jayas, Faculty of Agriculture, University of Manitoba, CFI project on grain storage research center at the University of Manitoba.

4. Honors

Maple Leaf Award, Canadian Society for Bioengineering 2009. **Fellow ASABE** (American Society of Agricultural & Biological Engineers) 2009. **Leadership Citation** – President of the Canadian Society for BioEngineering (2006-07). **Fellow**, Canadian Society of Agricultural Engineering (2003). **Leadership Citation** – ASAE Standards development & contribution (2002). **Bioenergy Feedstock Development Program** – Oak Ridge National Laboratory “For outstanding contributions and teamwork”(2002). **Canadian Dehydrators Association & the Canadian Hay Association** for contribution to forage engineering research (2000). **Award of Merit**, International Drying Technology Journal, original contribution to drying Science (1999). **Team Award** Polish Ministry of Education, for a contributing chapter in the published book: Thermal Processing of Bio material (1999). **Honorary Professor**, Jiangsu University of Science and Technology, Zhengjiang City, China (1994). **John C. Clark Award**. Canadian Society of Agricultural Engineering, research and teaching, electric power and processing (1991). **Richard B. Russell Agricultural Research Center**, ARS-USDA, Contribution to dielectric properties of grain. (1986)

5. PUBLICATIONS

5.1 Recent Refereed journals (204 peer reviewed published journal papers):

- Nehru C., A.R. Womac, V.S. P. Bitra, D. C. Yoder, S. Sokhansanj. 2009. Flowability parameters for chopped switchgrass, wheat straw and corn stover. Accepted Powder Technology 193(2009) 79-86.
- Igathinathane, C., L.O. Pordesimo, E.P. Columbus, W.D. Batchelor, S. Sokhansanj. 2009. Sieveless particle size distribution analysis of particulate materials through computer vision. Computers and Electronics in Agriculture Elsevier COMPAG 2214. doi.org/10.1016/j.compag.2009.01.005
- Chau, J., T. Sowlati, S. Sokhansanj, F. Preto, S. Melin, X. Bi. 2009. Economic sensitivity of wood biomass utilization for greenhouse heating application. Applied energy 86(2009):616-621.
- Chau, J., T. Sowlati, S. Sokhansanj, F. Preto, S. Melin. 2009. Optimizing the mixture of wood biomass for greenhouse heating. International Journal of Energy Research 33:274-284
- Mohammadhossein Mahmoudi, Dr. Taraneh Sowlati, Shahab Sokhansanj. 2009. The Logistics of Supplying Biomass from a Mountain Pine Beetle Infested Forest to a Power Plant in British Columbia. Submitted to Scandinavian Journal of Forest Research 24:76-86.
- Bitra, V.S.P., A. Womac, N. Chevanan, P.I. Miu, C. Igathinathane, S. Sokhansanj, D. Smith. 2009. Direct mechanical energy measures of hammer mill comminution of switchgrass, wheat straw, and corn stover and analysis of their particle size distributions. Powder Technology (2009) doi:10.1016/j.powtec.2009.02.010.
- Sokhansanj, S., S. Mani, A. Turhollow, A. Kumar, B. Bransby, L. Lynd, M. Laser. 2009. Large scale production, harvest and logistics of switchgrass (*Panicum virgatum L.*) – current technology and envisioning a mature technology. Biofuel, Bioproduct, Biorefinery Society of Chemical Industry and John Wiley & Sons, Ltd. DOI:10.1002/bbb
- Igathinathane, C. A. R. Womac, S. Sokhansanj, S. Narayan. 2009. Size reduction of high and low moisture corn stalks by linear knife grid system. Biomass & Bioenergy 33(2009):547-557.
- Zaini, P., Shahab Sokhansanj, Xiaotao Bi, Sudhagar Mani, John Kadla. 2009. Density, heating value, and composition of pellets made from lodgepole pine (*Pinus contorta* Douglas) infested with Mountain Pine Beetle (*Dendroctonus ponderosae* Hopkins). Canadian Biosystems Engineering 50:3.47-3.55.
- Chau, J, T. Sowlati, S. Sokhansanj, F. Preto, S. Melin, X. Bi. 2009. [Techno-economic analysis of wood biomass boilers for the greenhouse industry](#). Applied Energy, Volume 86(3):364-371
- Sokhansanj, S., A.F. Turhollow, E.G. Wilkerson. 2008. Integrated Biomass Supply and Logistics: A modeling environment for designing feedstock supply systems for biofuel production. Resource Engineering and Technology for a Sustainable World. 15(6):15-18.
- Kuang, Xingya, Tumuluru Jaya Shankar, Xiaotao T. Bi, c. Jim Lim, Shahab Sokhansanj, Staffan Melin. 2008. Characterization and kinetics study of off-gas emissions from stored wood pellets. Annals of Occupational Hygiene doi: 10.1093/annhyg/men053
- Lam, P.S., S. Sokhansanj, X. Bi, C. J. Lim, L.J. Naimi, M. Hoque, S. Mani, A.R. Womac, S. Narayan, X. P. Ye. 2008. Bulk Density of Wet and Dry Wheat Straw and Switchgrass Particles. Applied Engineering in Agriculture 24(3):351-358
- Ye, X. P., Lu Liu, D. Hayes, A. Womac, K. Hong, and S. Sokhansanj. 2008. Fast Classification and Compositional Analysis of Cornstover Fractions Using Fourier Transform Near-infrared Techniques. Bioresource Technology. Feb 2, 2008 [Epub ahead of print]. Placed on Web PMID:18249535
- Kumar, A., P.C Flynn, and S. Sokhansanj. 2008. Biopower Generation from Mountain Pine Infested Wood in Canada: An Economical Opportunity for Greenhouse Gas Mitigation. Renewable energy 33(6):1354-1363
- Dai, Jianjun, Shahab Sokhansanj, John R Grace, Xiatao Bi, C.J. Lim and Staffan Melin. 2008. Overview and some issues related to co-firing biomass and coal. The Canadian Journal of Chemical Engineering. 44 pages. <http://services.bepress.com/cgi/preview.cgi?article=1653&context=cjche>
- Igathinathane, C., A. R. Womac, L. O. Pordesimo, S. Sokhansanj. 2008. Mold appearance and modeling on selected corn stover components during moisture sorption. Submitted to Bioresource Technology. Bioresource Technology (2008), doi:10.1016/j.biortech.2007.11.075
- Igathinathane, C., A.R. Womac, S. Sokhansanj, and S. Narayan. 2008. Knife grid size reduction to pre-process packed beds of high- and low-moisture switchgrass. Bioresource Technology. 99(2008) 2254-2264.
- Igathinathane, C. A. R. Womac, S. Sokhansanj, L. O. Pordesimo. 2007. Moisture sorption thermodynamic properties of corn stover fractions. Transactions of the ASAE 50(6):2151-2160.

- Turhollow, A.F. and S. Sokhansanj. 2007. Costs of harvesting, storing in a large pile, and transporting corn stover in a wet form. *Applied Engineering in Agriculture* 23(4):439-448
- Prewitt, R.M., M.D. Montross, S.G. McNeill, T.S. Stombaugh, S.A. Shearer, S.F. Higgins, and S. Sokhansanj. 2007. Corn stover availability and collection efficiency using typical hay equipment. *Transactions of the ASAE* 50(3):705-711.
- Kumar, A., S. Sokhansanj. 2007. Switchgrass (*Panicum virgatum*, L.) delivery to a biorefinery using integrated biomass supply analysis and logistics (IBSAL) model. *Bioresource Technology* 98, 1033-1044.
- Sokhansanj S., A. Kumar A., and A.F. Turhollow. 2006. Development and implementation of integrated biomass supply analysis and logistics (IBSAL) model, *Biomass and Bioenergy*, 30(2006):838-847.
- Sokhansanj, S., S. Mani , M. Stumborg, R. Samson, and J. Fenton 2006. Production and distribution of cereal straw on the Canadian Prairies. *Canadian Biosystems Engineering* 48:3.39-3.46.
- Adapa, P., G. Schoenau, L. Tabil, S. Sokhansanj, A. Singh. 2007. Compression of fractionated sun-cured and dehydrated alfalfa chops into cubes – specific energy models. *Bioresource Technology* 98(2007)38-45.
- Mani, S., L.G. Tabil, and S. Sokhansanj. 2006. Effects of compressive force, particle size and moisture content on mechanical properties of biomass pellets. *Biomass & Bioenergy* 30(2006):648-654.
- Mani, S., S. Sokhansanj, X. Bi, A. Turhollow. 2006. Economics of producing fuel pellets from biomass. *Applied Engineering in Agriculture* 22(3):421-426.
- Mani, S., L. G. Tabil, S. Sokhansanj. 2006. Specific Energy Requirement for Compacting Corn Stover. *Bioresource Technology* 97(2006):1420-1426.
- Phani A., G. Schoenau, L. Tabil, S. Sokhansanj and A. Singh. 2006. Compression of fractionated sun-cured and dehydrated alfalfa chops into cubes – specific energy models. *Accepted Bioresource Technology* (Dec 10, 2005).
- Kumar, A. S. Sokhansanj, and P.C. Flynn. 2006. Development of a Multi-Criteria Assessment Model for Ranking Biomass Feedstock Collection and Transportation Systems. *Applied Biochemistry and Biotechnology* 129-132:71-87.
- Pordesimo, L.O., A. M. Saxton, S. Sokhansanj. 2006. Comparative field drying of *bt* and non-*bt* corn stover fractions after grain physiological maturity. *International Journal of Agricultural Research* 1(2):194-201.
- Igathinathane, C., A. R. Womac, S. Sokhansanj, L. O. Pordesimo. 2006. Mass and moisture distribution in above ground components of standing corn plant. *Transactions of the ASAE* 49(1):97-106.
- Igathinathane, C., A. R. Womac, S. Sokhansanj, L. O. Pordesimo. 2005. Sorption Equilibrium moisture characteristics of selected corn stover components. *Transactions of the ASAE* 48(4):1449-1460.
- Samson, Roger, Sudhagar Mani, Robert Boddey, Shahab Sokhansanj, Diego Quesada, Segundo Urquiaga, Veronica Reis, and Claudia Ho Lem. 2005. The Potential of C₄ Perennial Grasses for Developing a Global BIO-HEAT Industry. *Critical Review in Plant Science* 24:461-495 (2005).
- Womac, A.R., C. Igathinathane, S. Sokhansanj, and L.O. Pordesimo. 2005. Biomass moisture relations of an agricultural field residue: corn stover. *Transactions of the ASAE* 48(6):2073-2083.
- Yang, W., P. Winter, S. Sokhansanj, H. Wood, B. Crerar. 2005. Discrimination of hard-to-pop popcorn kernels by machine vision and neural networks. *Biosystems Engineering* 9(1):1-8.
- Phani Adapa, Greg Schoenau, Lope Tabil, Shahab Sokhansanj and Asheesh Singh. 2005. Compression of fractionated sun-cured and dehydrated alfalfa chops into cubes – pressure density models. *Canadian Biosystems Engineering*, 47:3.33-3.39.
- Adapa, P.K., G.J. Schoenau, L.G. Tabil and S. Sokhansanj. 2005. Cubing characteristics of fractionated sun-cured and dehydrated alfalfa chops. *Applied Engineering in Agriculture, ASAE Transactions*. 21(4):671-680.
- Adapa, P.K., G.J. Schoenau, L. Tabil, S. Sokhansanj and A. Singh. 2005. Compression of fractionated sun cured and dehydrated alfalfa chops into cubes – pressure density models. *Canadian Biosystems Engineering*, 47:3.33-3.39.
- Mani, S., L.G. Tabil and S. Sokhansanj. 2004. Evaluation of compaction equations applied to four biomass species. *Canadian Biosystems Engineering* 46:3.55-3.61.
- Pordesimo, L.O., S. Sokhansanj, and W.C. Eden. 2004. Moisture and yield of corn stover fractions before and after grain maturity. *Transactions of the ASAE* 47(5):1597-1603.
- Mani, S., L. G. Tabil Jr., S. Sokhansanj. 2004. Mechanical Properties of Corn Stover Grind. *Transactions of the ASAE* 47(6):
- Mani, S., L. G. Tabil, Jr., and S. Sokhansanj. 2004. Grinding performance and physical properties of wheat and barley straws, corn stover and switchgrass. *Biomass & Bioenergy* 27(2004):339-352.

- Adapa, P.K., L.G. Tabil, G.J. Schoenau, S. Sokhansanj. 2004. Pelleting characteristics of fractionated sun cured and dehydrated alfalfa grind. *Applied Engineering in Agriculture* 20(6):813-820.
- Sokhansanj, S. and A. Turhollow. 2004. Biomass densification – cubing operations and costs. *Applied Engineering in Agriculture*. 20(4): 495-499.
- Pordesimo, L. O., W. C. Edens, and S. Sokhansanj S. 2004. Distribution of aboveground biomass in corn stover. *Biomass Bioenergy* 26:337-43.

5.2 Book chapters

- Mani, S. and S. Sokhansanj. 2007. Rotary drum dryers. In: *Food Drying Science and Technology*. Micro biology, Chemistry, Applications. Ed: Y.H.Hui et al. Destech Publications, Inc. Pages 99-122.
- Adapa, P.K., G.J. Schoenau, L.G. Tabil and S. Sokhansanj. 2004. Fractional Drying of Alfalfa Leaves and Stems: Review and Discussion. Book Chapter in “Dehydration of Products of Biological Origin”. Science Publishers/Oxford & IBH. Edited by Dr. A.S. Mujumdar.
- Sokhansanj, S. 2003. Dry bulb temperature. In *Encyclopedia of Agricultural, Food, and Biological Engineering*. 4 pages.
- Sokhansanj, S. and L. Pordesimo. 2003. Drying of herbaceous biomass. 2003. In: *Drying of Products of Biological Origin* (Ed: A. Mujumdar). Enfeld Publishers, NH,USA. 18 pages.
- Sokhansanj, S., A. Leinonen. 2003. Drying of woody biomass. 2003. In: *Drying of Products of Biological Origin* (Ed: A. Mujumdar). Enfeld Publishers, NH,USA. 19 pages. (in Press)
- Sokhansanj, S. and R.T. Patil. 2002. Dehulling and splitting pulses. In: *Handbook of Postharvest technology, cereals, fruits, vegetables, tea, and spices* (Ed: Chakraverty et al.) Marcel Dekker, Inc. New York. Pages 397-426
- Tabil, L.G., and S. Sokhansanj. 2000. Mechanical and thermal effects on shelf life stability of fruits and vegetables. In: *Food Shelf life stability – Chemical, Biochemical, and microbiological changes*. CRC Press, Boca Raton Florida. Pages 37-85.

TEACHING RECORD:

- CMPT 122 Introduction to Computer Science (1984, 1986-1990)
- AE 311 Mathematical Methods in Agricultural Engineering (1995-2000)
- AE 322 Agricultural Systems Analysis [(AE 338, 1986-1987), 1996-2000]
- MECAG 317 Farm Buildings (1982-84)
- AE 323 Physical Properties of Agricultural Materials and Food Products (1990-1997)
- AE 331 Thermodynamics of Agricultural Systems (1979-1988)
- AE 334 Agricultural Structures (1979-1984)
- ME 327 Heat Transfer (1994)
- MECAG 421 Principles of Food Processing Equipment (1979, 1986-1996)
- AE 436 Agriculture Process Engineering (1979, 1986-1990)
- AE 460 Agricultural Materials Handling (1991-1994)
- BIORE 462.3 Agricultural Processing (1994-2000)
- AE 490 Agricultural Engineering Design Project advisor (1979-2000)
- AE 495 Agricultural and Bioresource Design class coordinator (Fall 2000)
- AE 850 Post Harvest Technology (1984-2000)
- AE 860 (Formerly under AE 841 and AE 898) Parameter Estimation (1987-2000)
- AE 898 Special Problems in Agricultural Engineering (1979-2000)
- CHBE 464 Chemical Engineering Laboratory (2003-2004) – University of British Columbia

LEAVES:

- AFRC Institute of Engineering Research, Wrest park, Bedford U.K. (July-December 1985)
- U.S. Department of Agriculture - Russell Research Center Athens, Georgia (January - June 1986)
- Department of Geography, Simon Fraser University, Burnaby, B.C. (July 1-December 31, 1997)
- Oak Ridge National Laboratory, Oak Ridge, Tennessee (Jan 1 2001- December 31, 2001).