

SAJID ALAVI

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Education

- **Doctor of Philosophy, 2002** **Cornell University, Ithaca, NY**
Food Science/ Food Engineering
Minors: Chem. Eng.; Operations Research & Ind. Eng.
- **Master of Science, 1997** **Pennsylvania State University, State College, PA**
Agricultural & Biological Engineering
- **Bachelor of Science, 1995** **Indian Institute of Technology, Kharagpur**
Agricultural Engineering

Professional Experience

- **Professor, 2013 – present**
Dept. of Grain Science and Industry, Kansas State University
10% teaching, 90% research appointment; Research Areas – Food engineering; Extrusion processing of food and feed materials; Food structure-texture relationships; Value-added utilization of agricultural commodities
- **Associate Professor, 2008 – 2013**
Dept. of Grain Science and Industry, Kansas State University
- **Assistant Professor, 2002 – 2008**
Dept. of Grain Science and Industry, Kansas State University
- **Post-Doctoral Associate, 2002**
Dept. of Food Science, Cornell University

Teaching and Student Advising

- GRSC 820 Advanced Extrusion Processing; GRSC 620 Extrusion in Food and Feed Industries
- GRSC 790 Agriculture & Food Processing in India, Southern Africa and Brazil (Study Abroad – 2010, 2013 & 2017)
- GRSC 499/ 910 Professional & Product Development in Industry Settings
- GRSC 645/ 646 Pet Food Processing
- ATM 540/ 541 Introduction to Food Engineering and Laboratory.
- Student Advising. Kansas State. Major advisor for 7 Ph.D. students and 13 M.S. students in Grain Science and Food Science. Undergraduate advisor for 19 Grain Science students.
- Student Clubs. Faculty advisor for the Grain Science food product development team (2004-07); Faculty advisor for the K.S.U. Indian Student Association (2008-11).

Memberships and Honors

- AACC International. 2010 Young Research Scientist Award.
- Institute of Food Technologists (IFT); Food Engineering Division Member-at-Large (2009-13)
- AACC International (AACCI); Scientific Initiative Chair for Engineering, Processing and Rheology (2008-09); Engineering & Processing Division Chair (2009-10), Chair-Elect (2008-09), Secretary/ Treasurer (2007-08); Rheology Division Chair (2006-07), Chair-Elect (2005-06), Secretary/ Treasurer (2004-05)
- Honor Societies - Gamma Sigma Delta (Agriculture) and Alpha Epsilon (Agricultural Engineering)

Refereed Publications (80)

- Xu, J., Manepalli, P.H., Zhu, L., Narayan-Sarathy, S., and Alavi, S. 2019. Morphological, barrier and mechanical properties of films from poly (butylene succinate) reinforced with nanocrystalline cellulose and chitin whiskers using melt extrusion. *Journal of Polymer Research*. Accepted June 2019.
- Delimont, N.M., Vahl, C.I., Kayanda, R., Msuya, W., Mulford, M., Alberghine, P., Praygod, G., Mngara, J., Alavi, S., and Lindshield, B.L. 2019. Complementary feeding of sorghum-based and corn-based fortified blended foods results in similar iron, vitamin A and anthropometric outcomes in the MFFAPP Tanzania efficacy study. *Current Developments in Nutrition*, nzz027. Accepted April 2019. <https://doi.org/10.1093/cdn/nzz027>
- Chambers, E., Maughan, C., Padmanabhan, N., Alavi, S., and Adedeji, A. 2019. Sensory Analysis of 20% Solids Fortified Blended Porridge. *British Food Journal*. 21(2), 633-64.
- Manepalli, P.H., Mathew, J.M., and Alavi, S. 2019. Stochastic modeling of expansion of starchy melts during extrusion. *J. Food Engineering*. 245: 57-64.
- Fiorentino, N.M., Kimmel, K.A., Suleria, H.A.R, Joseph, M., Alavi, S., Beyer, R.S., and Lindshield, B.L. 2018. Novel formulated fortified blended foods result in improved protein efficiency and hepatic iron concentrations compared to CSB+ in broiler chickens. *Current Developments in Nutrition*. Accepted September 2018. <https://doi.org/10.1093/cdn/nzy073>
- Chanadang, S., Chambers, E., Alavi, S., Kayanda, R., and Msuya, W. 2018. Novel fortified blended foods: Preference testing with infants and young children in Tanzania and descriptive sensory analysis. *J. Food Science*. 83: 2343-2350.
- Alvarenga, I.C., Ou, Z., Alavi, S., Thiele, S., and Aldrich, C.G. 2018. Effects of milling sorghum into fractions on yield, nutrient composition, and their performance in extrusion of dog food. *Journal of Cereal Science*. Accepted May 2018.
- Penugonda, K., Fiorentino, N., Alavi, S., and Lindshield, B.L. 2018. Bioavailable iron and vitamin A in newly formulated, extruded corn, soybean, sorghum and cowpea fortified-blended foods in the in-vitro digestion/Caco-2 cell mode. *Current Developments in Nutrition*. Accepted April 2018.
- Guo, Q., Joseph, M., Setia, R., Vikhona, H., Sharma, K., and Alavi, S. 2018. Extruded corn soy blends: Physicochemical and molecular characterization. *Journal of Cereal Science*. 79: 486-493.
- Manepalli, P.H., Dogan, H., Mathew, J.M., and Alavi, S. 2017. Mathematical modeling of flow behavior and cell structure formation during extrusion of starchy melts. *Journal of Food Engineering*, 198, 7-16.
- Zhu, L., Adedeji, A.A., and Alavi, S. 2017. Effect of germination and extrusion on physicochemical properties and nutritional qualities of extrudates and tortilla from wheat. *Journal of Food Science*. *Journal of Food Science*, 82(8), 1867-1875.
- Delimont, N.M., Chanadang, S., Joseph, M.V., Rockler, B.E., Guo, Q., Regier, G.K., Mulford, M.R., Kayanda, R., Range, M., Mziray, Z., Jonas, A., Mugyabuso, J., Msuya, W., Lilja, N.K., Procter, S.B., Chambers, E., Alavi, S., and Lindshield, B.L. 2017. Newly formulated, extruded fortified-blended foods for food aid: The MFFAPP Tanzania field trial protocol. *Current Developments in Nutrition*, 1(5), e000315.
- Bell, B., Adhikari, K., Chambers, E., Alavi, S., King, S., and Haub, M. 2017. Spices in a product affect emotions: A study with an extruded snack product. *Foods* 2017, 6(8), 70; doi:10.3390/foods6080070.
- Sharma, C., Manepalli, P.H., Thatte, A., Thomas, S., Kalarikkal, N., and Alavi, S. 2017. Biodegradable starch/PVOH/laponite RD-based bionanocomposite films coated with graphene oxide: Preparation and performance characterization for food packaging applications. *Colloid and Polymer Science*, 295 (9), 1695-1708.
- Delimont, N.M., Fiorentino, N.M., Opoku-Acheampong, A.B., Joseph, M.V., Guo, Q., Alavi, S., Lindshield, B.L. 2017. Newly formulated, protein quality-enhanced, extruded sorghum-, cowpea-

corn-, soya-, sugar-And oil-containing fortified-blended foods lead to adequate Vitamin A and iron outcomes and improved growth compared with non-extruded CSB+ in rats. *Journal of Nutritional Science*, 6, e18.

- Bingham, A.C., Subramanyam, B., Mahroof, R., Alavi, S. 2017. Development and validation of a model for predicting survival of young larvae of *Tribolium castaneum* exposed to elevated temperatures during heat treatment of grain-processing facilities. *Journal of Stored Products Research*, 72, 143-152.
- Manbeck, A.E., Aldrich, C.G., Alavi, S., Zhou, T., and Donadelli, R.A. 2017. The effect of gelatin inclusion in high protein extruded pet food on kibble physical properties. *Animal Feed Science and Technology*, 232, 91-101.
- Adedeji, A.A., Zhou, Y., Fang, X., Davis, D.A., Fahrenholz, A., and Alavi, S. 2017. Utilization of sorghum distillers dried grains (sDDGS) in extruded and steam pelleted shrimp diets. *Aquaculture Research*, 48(3): 883–898; doi:10.1111/are.12932.
- Adedeji, A.A., Joseph, M.V., Plattner, B., and Alavi, S. 2017. Physicochemical and functional properties of extruded sorghum based bean analog. *Journal of Food Process Engineering*. 40(2); doi: 10.1111/jfpe.12401.
- Adedeji, A.A., Suhr, E., Bhadriraju, S., and Alavi, S. 2017. Drying characteristics of bean analog – A sorghum based extruded product. *Journal of Food Processing and Preservation*, 41(2); doi:10.1111/jfpp.12856.
- Monti, M., Gibson, M., Loureiro, B.A., Sá, F.C., Putarov, T.C., Villaverde, C., Alavi, S., and Carciofi, A.C. 2016. Influence of dietary fiber on macrostructure and processing traits of extruded dog foods. *Animal Feed Science and Technology*, 220: 93–102.
- Chanadang, S., Chambers, E, and Alavi, S. 2016. Tolerance testing for cooked porridge made from a sorghum based fortified blended food. *Journal of Food Science*. 81(5): S1210-1221.
- Zhu, L., Jones, C., Guo, Q., Lewis, L., Stark, C. R., and Alavi, S. 2016. An evaluation of total starch and starch gelatinization methodologies in pelleted animal feed. *Journal of Animal Science*, 94(4):1501–1507; doi:10.2527/jas2015-9822
- Manikantan, M.R., Ambrose, R.P., and Alavi, S. 2015. Flow-specific physical properties of coconut flours. *International Agrophysics*, 29(4): 459–465.
- Koppel, K., Monti, M., Gibson, M., Alavi, S., Di Donfrancesco, B., and Carciofi, A.C. 2015. The effects of fiber inclusion on pet food sensory characteristics and palatability. *Animals*, 5(1), 110-125; doi:10.3390/ani5010110.
- Abu-Ghoush, M., Alavi, S., Adhikari, K., Al-Holy, M., and Al-Dabbas, M. 2015. Sensory and nutritional properties of novel, cooked extruded lentil analog. *Journal of Food Processing and Preservation*. 39(6): 1965-1975; doi: 10.1111/jfpp.12436.
- Abu-Ghoush, M., Alavi, S., and Al-Shathri, A. 2015. Novel cooked extruded lentils analog: Physical and chemical properties. *Journal Food Science and Technology*. 52(7): 4216–4225. doi: 10.1007/s13197-014-1479-3.
- Phan, U., Edgar IV, C., Natarajan, P., and Alavi, S. 2014. Accelerated vs. real time modeling for shelf life: An example with fortified blended foods. *Science and Technology Development Journal*, 17(3), 83-91. doi: 10.32508/stdj.v17i3.1503.
- Koppel, K., Gibson, M., Alavi, S., and Aldrich, G. 2014. The effects of cooking process and meat inclusion on pet food flavor and texture characteristics. *Animals*, 4 (2): 254-271.
- Devi, N.L., Shobha, S., Alavi, S., Kalpana, K., and Soumya, M. 2014. Utilization of extrusion technology for the development of millet based complementary foods. *Journal of Food Science and Technology*. 51(10): 2845-2850. DOI: 10.1007/s13197-012-0789-6.
- Yoo, J., Alavi, S., Adhikari, K., Haub, M.D., Aberle, R.A., and Huber, G. 2013. Rice-shaped extruded kernels: Physical, sensory and nutritional properties. *International Journal of Food Properties*. 16 (2): 301-321. Kansas AES Contribution Number 10-197-J.
- Devi, N.L., Sagaram, S., Tang, X., Shaur, S.A., Dogan, H., and Alavi, S. 2013. Development of

protein-rich sorghum-based expanded snacks using extrusion technology. *International Journal of Food Properties*. 16 (2): 263-276. Kansas AES Contribution Number 10-279-J.

- Lundblad, K.K., Hancock, J.D., Behnke, K.C., McKinney, L.J., Alavi, S., Prestlökken, E., and Sørensen, M. 2012. Ileal digestibility of crude protein, amino acids, dry matter and phosphorous in pigs fed diets steam conditioned at low and high temperature, expander conditioned or extruder processed. *Animal Feed Science and Technology*. 172(3-4): 237-241.
- Tang, X., and Alavi, S. 2012. Structure and physical properties of starch/poly vinyl alcohol/laponite RD nanocomposite films. *Journal of Agriculture and Food Chemistry*. 60: 1954–1962. Kansas AES Contribution Number 11-137-J.
- Karkle, E., Alavi, S. and Dogan, H. 2012. Cellular architecture and its relationship with mechanical properties in expanded extrudates containing apple pomace. *Food Research International*. 46 (1): 10-21. Kansas AES Contribution Number 11-114-J.
- Yoo, J., Alavi, S., Vadlani, P., and Behnke, K. 2012. Soybean hulls pretreated using thermo-mechanical extrusion - hydrolysis efficiency, fermentation inhibitors and ethanol yield. *Applied Biochemistry and Biotechnology*. 166(3): 576-589. Kansas AES Contribution Number 11-172-J.
- De Mesa-Stonestreet, N.J., Alavi, S., and Gwirtz, J. 2012. Extrusion-enzyme liquefaction as a method for producing sorghum protein concentrates. *Journal of Food Engineering*. 108: 365-375. Kansas AES Contribution Number 10-326-J.
- Karkle, E.L., Keller, L., Dogan, H., and Alavi, S. 2012. Extent of matrix transformation in fiber-added extruded products under different hydration regimens and its impact on texture, microstructure and digestibility. *Journal of Food Engineering*. 108: 171-182. Kansas AES Contribution Number 11-176-J.
- Tang, X.Z., P. Kumar, Alavi, S., and Sandeep, K.P. 2012. Recent advances in biopolymers and biopolymer-based nanocomposites for food packaging materials. *Critical Reviews in Food Science and Nutrition*. 52(5):426-442. Kansas AES Contribution Number 08-376-J.
- Yoo, J., Alavi, S., Vadlani, P., and Amanor-Boadu, V. 2011. Thermo-mechanical extrusion pretreatment for conversion of soybean hulls to fermentable sugars. *Bioresource Technology*. 102: 7583–7590. Kansas AES Contribution Number 11-118-J.
- Ali, S.S., Tang, X., Alavi, S., and Faubion, J. 2011. Structure and physical properties of starch/ poly vinyl alcohol/ sodium montmorillonite nanocomposite films. *Journal of Agricultural and Food Chemistry*. 59 (23): 12384–12395. Kansas AES Contribution Number 10-299-J.
- Tang, X., and Alavi, S. 2011. Recent advances in starch, polyvinyl alcohol based polymer blends, nanocomposites and their biodegradability. *Carbohydrate Polymers*. 85: 7–16. Kansas AES Contribution Number 11-139-J.
- Lundblad, K.K., Issa, S., Hancock, J.D., Behnke, K.C., McKinney, L.J., Alavi, S., Prestlökken, E., Fledderus, J., and Sørensen, M. 2011. Effects of steam conditioning at low and high temperature, expander conditioning and extruder processing prior to pelleting on growth performance and nutrient digestibility in nursery pigs and broiler chickens. *Animal Feed Science and Technology*. 169 (3-4): 208 – 217.
- Yao, N, White, P.J., and Alavi, S. 2011. Impact of β -glucan and other oat flour components on physico-chemical and sensory properties of extruded oat cereals. *International Journal of Food Science and Technology*. 46(3): 651-660.
- Kumar, P., Sandeep, K., Alavi, S. and Truong, V. 2011. A review of experimental and modeling techniques to determine properties of biopolymer-based nanocomposites. *Journal of Food Science*. 76: E2–14.
- Liu, S., Alavi, S., and Abu-Ghoush, M. 2011. Extruded moringa leaf – oat flour snacks: Physical, nutritional and sensory properties. *International Journal of Food Properties*. 14(4): 854-869. Kansas AES Contribution Number 09-172-J.
- Kumar, P., Sandeep, K.P., Alavi, S., Truong, V.D., and Gorga, R. E. 2010. Preparation and characterization of bio-nanocomposite films based on soy protein isolate and montmorillonite using

melt extrusion. *Journal of Food Engineering*. 100 (3): 480-489.

- Kumar, P., Sandeep, K.P., Alavi, S., Truong, V.D., and Gorga, R. E. 2010. Effect of type and content of modified montmorillonite on the structure and properties of bio-nanocomposite films based on soy protein isolate and montmorillonite. *Journal of Food Science*. 75 (5): N46-56.
- Lamsal, B., Yoo, J., Brijwani, K., and Alavi, S. 2010. Extrusion as a thermo-mechanical pretreatment for lignocellulosic ethanol. *Biomass and Bioenergy*. 34: 1703-1710. Kansas AES Contribution Number 08-356-J.
- Zhu, L., Shukri, R., de Mesa-Stonestreet, N.J., Alavi, S., Dogan, H., and Shi, Y-C. 2010. Mechanical and microstructural properties of soy protein-high amylose corn starch extrudates in relation to physiochemical changes of starch during extrusion. *Journal of Food Engineering*. 100(2):232-238. Kansas AES Contribution Number 09-311-J.
- De Mesa-Stonestreet, N.J., Alavi, S., and Bean, S. 2010. Sorghum Proteins: The concentration, isolation, modification, and food applications of kafirins. *Journal of Food Science: Concise Reviews and Hypotheses in Food Science*. *Journal of Food Science* 75(5): R90-104. Kansas AES Contribution Number 10-185-J.
- Kaddour, O. and Alavi, S. 2010. Manufacture and evaluation of a single pass rotary cooler for aquatic feed pellets. *Journal of Food Process Engineering*. 33(4): 585-605.
- Sang, Y., Alavi, S., and Shi, Y-C. 2009. Subzero glass transition of waxy maize starch studied by differential scanning calorimetry. *Starch/ Starke*. 61 (12): 687-695. Kansas AES Contribution Number 09-252-J.
- De Mesa, N.J.E., Alavi, S., Singh, N., Shi, Y-C, Dogan, H. and Sang, Y. 2009. Soy protein-fortified expanded extrudates: Baseline study using normal corn starch. *Journal of Food Engineering*. 90(2): 262-270. Kansas AES Contribution Number 08-197-J.
- Gajula, H., Liu, S., Alavi, S., Herald, T., Madl, R., Bean, S.R. and Tilley, M. 2009. Pre-cooked fiber-enriched wheat flour obtained by extrusion: rheological and functional properties. *International Journal of Food Properties*. 12: 27-44. Kansas AES Contribution Number 07-237-J.
- Yao, N, White, P., Jannink, J-L, and Alavi, S. 2008. Impact of dry solids and bile acid concentrations on bile acid binding capacity of extruded oat cereals. *Journal of Agricultural and Food Chemistry*. 56(18): 8672-8679.
- Tang, X, Alavi, S. and Herald, T.J. 2008. Effect of plasticizers on the structure and properties of starch-clay nanocomposite films. *Carbohydrate Polymers*. 74: 552-558. Kansas AES Contribution Number 08-126-J.
- Boina, D.R., Subramanyam, B. and Alavi, S. 2008. Dynamic model for predicting survival of mature larvae of *Tribolium confusum* during facility heat treatments. *Journal of Economic Entomology*. 101 (3): 989-997. Kansas AES Contribution Number 08-61-J.
- Tang, X. Z., Alavi, S., and Herald, T. J. 2008. Barrier and mechanical properties of starch-clay nanocomposite films. *Cereal Chemistry*. 85(3): 433-439. Kansas AES Contribution Number 07-214-J.
- Gajula, H., Alavi, S., Adhikari, K., and Herald, T. J. 2008. Pre-cooked bran-enriched wheat flour using extrusion: dietary fiber profile and sensory characteristics. *Journal of Food Science*. 73(4): S173-S179. Kansas AES Contribution Number 07-248-J.
- Cheng, E., Alavi, S., Pearson, T., and Agbisit, R. 2007. Mechanical-acoustic and sensory evaluations of corn starch-whey protein isolate extrudates. *Journal of Texture Studies*. 38: 473-498. Kansas AES Contribution Number 06-285-J.
- Khouryieh, H.A., Herald, T. J., Aramouni, F., and Alavi, S. 2007. Intrinsic Viscosity and Viscoelastic Properties of Xanthan/Guar Mixtures in Dilute Solutions: Effect of Salt Concentration on the Polymer Interactions. *Food Research International*. 40: 883-893.
- Khouryieh, H.A., Herald, T. J., Aramouni, F., and Alavi, S. 2007. Influence of deacetylation on the rheological properties of xanthan-guar interactions in dilute aqueous solutions. *Journal of Food Science*. 72(3): C173-C181.
- Agbisit, R., Alavi, S., Cheng, E., Herald, T.J., and Trater, A.M. 2007. Relationships between

microstructure and mechanical properties of cellular corn starch extrudates. *Journal of Texture Studies*. 38: 199–219. Kansas AES Contribution Number 06-257-5.

- Higiroy, J, Herald, T.J., and Alavi, S. 2007. Rheological study of xanthan and locust bean gum interaction in dilute solution: effect of salt. *Food Research International*. 40: 435-447.
- Yao, N., Jannink, J.-L., Alavi, S., and White, P. 2006. Properties of extruded products made from high β -glucan and traditional oat lines. *Cereal Chemistry*. 83(6): 692-699.
- Lee, K.-M., Bean, S.R., Alavi, S., Herrman, T.J., and Waniska, R.D. 2006. Physical and biochemical properties of maize hardness and extrudates of selected hybrids. *Journal of Agricultural and Food Chemistry*. 54(12): 4260-4269
- Khouryieh, H.A., Herald, T. J., Aramouni, F., and Alavi, S. 2006. Influence of mixing temperature on xanthan conformation and interaction of xanthan-guar gum in dilute aqueous solutions. *Food Research International*. 39: 964-973.
- Higiroy, J, Herald, T.J., and Alavi, S. 2006. Rheological study of xanthan and locust bean gum interaction in dilute solution. *Food Research International*. 39(2): 165-175.
- Yaseen, E.I., Herald, and T.J., Aramouni, F.M., and Alavi, S.H. 2005. Rheological properties of selected gum solutions. *Food Research International*. 38: 111-119.
- Trater, A.M., Alavi, S, and Rizvi, S.S.H. 2005. Use of non-invasive X-ray microtomography for characterizing microstructure of extruded biopolymer foams. *Food Research International*. 38: 709-719.
- Alavi, S.H., and Rizvi, S.S.H. 2005. Strategies for enhancing expansion in starch-based microcellular foams produced by supercritical fluid extrusion. *International Journal of Food Properties*. 8: 23-34.
- Alavi, S.H. 2003. Starch research over the years. *Food Research International*. 36: 307-308.
- Alavi, S.H., Rizvi, S.S.H, and Harriott, P. 2003. Process dynamics of starch-based microcellular foams produced by supercritical fluid extrusion. I: Model development. *Food Research International*. 36: 309-319.
- Alavi, S.H., Rizvi, S.S.H., and Harriott, P. 2003. Process dynamics of starch-based microcellular foams produced by supercritical fluid extrusion. II: Numerical simulation and experimental evaluation. *Food Research International*. 36: 321-330.
- Alavi, S.H., Chen, K.-H., and Rizvi, S.S.H. 2002. Rheological characteristics of intermediate moisture blends of pregelatinized and raw wheat starch. *Journal of Agricultural and Food Chemistry*. 50: 6740-6745.
- Alavi, S.H., Puri, V.M. and Mohtar, R.H. 2001. An integrated dynamic growth – finite element model for predicting the growth of *Listeria monocytogenes* in packaged fluid milk. *Journal of Food Process Engineering*, 24 (4): 231-251.
- Gogoi, B.K., Alavi, S.H., Khan, M., Bowman, B.J. and Rizvi, S.S.H. 2000. Mechanical properties of protein-stabilized starch-based supercritical fluid extrudates. *International Journal of Food Properties*, 3 (1): 37-58.
- Alavi, S.H., Gogoi, B.K., Khan, M., Bowman, B.J., Rizvi, S.S.H. 1999. Structural properties of protein-stabilized starch-based supercritical fluid extrudates. *Food Research International*, 32 (2): 107-118.
- Alavi S.H., Puri, V.M., Knabel, S.J., Mohtar, R.H., and Whiting R.C. 1999. Development and validation of a dynamic growth model for *Listeria monocytogenes* in fluid whole milk. *Journal of Food Protection*, 62 (2): 170-176.

Book Chapters and Other Publications (20)

- Molla, A., Alavi, S., Subramanyam, B., Workneh, S., and Gabbiye, N. 2019. Performance comparisons of solar mixed and indirect dryers for maize grain drying. In *Advances of Science and Technology*. Eds. Zimale, F.A., Nigussie, T.E., Fanta, and S. W. Proceedings of the 6th EAI

International Conference, ICAST 2018, Bahir Dar, Ethiopia, October 5-7, 2018. Springer. pp. 145-159.

- Alavi, S., Mazumdar, S.D., and Taylor, J.R.N. 2018. Modern convenient sorghum and millet food, beverage and animal feed products, and their technologies. In *Sorghum and Millets - Chemistry, Technology, and Nutritional Attributes*. Second Edition. Eds. Taylor, J.R.N., and Duodu, K.G. Elsevier, Inc., Cambridge, MA.
- Alavi, S., Ruan, S., Adapa, S.S., Joseph, M., Lindshield, B., and Chilukuri, S. 2018. Use of grain sorghum in extruded products developed for gluten-free and food aid applications. In *Sorghum: State of the Art and Future Perspectives*. Eds. Ciampitti, I., and Prasad, V. Agronomy Monograph 58. ASA and CSSA, Madison, WI.
- Joseph, M., Alavi, S., Johnson, Q., Mohamedshah, F., Walton, S., and Webb, P. 2018. Improving the nutritional value of foods in the USAID food aid basket: Optimization of macro and micronutrients, food matrices, novel ingredients and food processing technologies. Report to USAID: Tufts University, Boston, MA. Retrieved August 24, 2018, from https://pdf.usaid.gov/pdf_docs/PA00T7SW.pdf.
- Joseph, M., Alavi, S., and Johnson, Q. 2017. Complementary foods and global fortification challenges. *World of Food Ingredients*. February 2017: 58-61.
- Alavi, S., and Ambrose, K. 2015. Particulate flow and agglomeration in food extrusion. In *Production, Handling and Characterization of Particulate Materials*. Eds. Merkus, H.G., and Meesters, G.M.H. Springer International Publishing, Switzerland.
- Alavi, S. 2015. Innovations in pasta: Precooked and gluten free products. *New Food*. 18(2): 34-37.
- Alavi, S., Giannetta, F., Nanjundaswamy, A., Madl, R., and Vadlani, P. 2014. Delivery of antioxidants through fruits and vegetables in extruded foods. *Cereal Foods World*. 59(4): 179-185.
- *Polymers for Packaging Applications*. 2014. Eds. S. Thomas, S.Alavi, K.P.Sandeep, N. Kalarickal, Jini V., and S. Rao. Apple Academic Press, Ontario, Canada. ISBN 9781926895772.
- Tang, X. Z., and Alavi, S. 2014. Understanding of mechanical and barrier properties of starch, polyvinyl alcohol and layered silicate nanocomposite films utilizing mathematical models. In *Polymers for Packaging Applications*. Eds. S. Thomas, S.Alavi, K.P.Sandeep, N. Kalarickal, Jini V., and S. Rao. Apple Academic Press, Ontario, Canada.
- Kumar, P., Sandeep, K.P., Alavi, S., and Truong, V.D. 2014. Analytical techniques for structural characterization of biopolymer-based nanocomposites. In *Polymers for Packaging Applications*. Eds. S. Thomas, S. Alavi, K.P.Sandeep, N. Kalarickal Jini V., and S. Rao. Apple Academic Press, Ontario, Canada.
- Gibson, M., and Alavi, S. 2013. Pet food processing – Understanding transformations in starch during extrusion and baking. *Cereal Foods World*. 58(5): 232-236.
- Rhodes, M.A., Hanson, T., Alavi, S., and Davis, D.A. 2013. High-soy, fishmeal-free diets support florida pompano growth. *Global Aquaculture Advocate*. Sept/ Oct. 2013: 96-99.
- Tang, X. Z., Alavi, S., Sandeep, K. P., and Kumar, P. 2012. Processing and industrial applications of natural polymer nanocomposites. In *Natural Polymers: Volume 2*, Eds. John, M., and Thomas, S. Royal Society of Chemistry, United Kingdom. Kansas AES Contribution Number 12-331-B.
- Alavi, S., Karkle, E., Adhikari, K., and Keller, L. 2011. Extrusion research for addressing the obesity challenge. *Cereal Foods World*. 56 (2): 56-60.
- Kumar, P., Sandeep, K.P., and Alavi, S. 2010. Extrusion of Foods. In *Mathematical Analysis of Food Processing*, Eds. Farid, M. Taylor and Francis.
- Alavi, S., and Rizvi, S.S.H. 2009. Supercritical fluid extrusion - a novel method for producing microcellular structures in starch-based matrices. In *Novel Food Processing - Effects on Rheological and Functional Properties*, Eds. Ahmed, J., Ramaswamy, H.S., Kasapis, S., and Boye, J. Taylor and Francis.
- Tang, X., and Alavi, S. 2010. Development and characterization of starch based nano-composites. In *Handbook of Carbohydrate Polymers: Development, Properties and Applications*, Eds. Ito, R., and

Matsuo, Y. Nova Science Publishers, Inc., Hauppauge, NY. pp. 45-83.

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- Alavi, S., Bugusu, B., Cramer, G., Dary, O., Lee, T.C., Martin, L., McEntire, J., and Wailes, E. 2008. Rice fortification in developing countries: A critical review of the technical and economic feasibility. Agency for Educational Development. Retrieved December 14, 2014, from http://pdf.usaid.gov/pdf_docs/pnaeb101.pdf.

Funded Grants and Contracts (\$11,000,776)

- WENGER MANUFACTURING. 2017. \$10,000. Upgrade of KSU extrusion lab pilot-scale facilities. Principal Investigator: Alavi, S. Duration: 10/04/17 - 06/30/17.
- WENGER MANUFACTURING. 2017. \$6,500. Confidential sponsored project. Principal Investigators: Alavi, S, and Carciofi, A. Duration: 8/01/17 - 02/28/18.
- PEPSICO 2017. \$75,000. Confidential sponsored project. Principal Investigator: Alavi, S. Duration: 1/1/17 - 12/31/17.
- PEPSICO 2016. \$2,500,000. Confidential sponsored project. Principal Investigators: Alavi, S., and Chambers, E. Duration: 12/15/16 - 12/15/21.
- UNITED SORGHUM CHECKOFF PROGRAM. 2015. \$150,000. Sustainability, oxidative stress mitigation and sensory characteristics of sorghum-based canine diets designed for the international market. Principal Investigators: Alavi, S., de Godoy, M.R.C., and Koppel, K. Duration: 03/15/16 - 03/14/17.
- UNITED SORGHUM CHECKOFF PROGRAM. 2014. \$130,000. Use of grain sorghum as the primary grain ingredient in premium extruded foods designed for cats. Principal Investigators: Alavi, S., Carciofi, A., and Koppel, K. Duration: 03/15/15 - 03/15/17.
- WENGER MANUFACTURING. 2014. \$30,000. Upgrade of KSU extrusion lab pilot-scale facilities. Principal Investigator: Alavi, S. Duration: 11/13/14 - 02/28/15.
- HERSHEY COMPANY. 2014. \$15,090. Confidential sponsored project. Principal Investigator: Alavi, S. Duration: 10/27/14 - 06/30/15.
- WENGER MANUFACTURING. 2014. \$30,000. Confidential sponsored project. Principal Investigator: Alavi, S. Duration: 11/13/14 - 02/28/15.
- PEPSICO ADVANCED RESEARCH GROUP. 2014. \$5,000. Confidential sponsored project. Principal Investigator: Alavi, S. Duration: 08/08/14 - 11/26/14.
- PEPSICO, INC. 2014. \$7,400. Confidential sponsored project. Principal Investigator: Alavi, S. Duration: 05/01/14 - 07/31/14.
- PEPSICO, INC. 2013. \$67,500. Confidential sponsored project. Principal Investigators: Alavi, S., and Zhu, L. Duration: 09/15/13 - 12/15/14.
- PEPSICO, INC. 2013. \$9,450. Confidential sponsored project. Principal Investigator: Alavi, S. Duration: 09/15/13 - 11/30/13.
- UNITED SORGHUM CHECKOFF PROGRAM. 2013. \$68,550. Use of grain sorghum as the primary cereal ingredient in premium pet food products. Principal Investigators: Alavi, S., Carciofi, A., and Gibson, M. Duration: 03/01/14 - 02/28/15.
- WENGER MANUFACTURING. 2012. \$60,000. Confidential sponsored project. Principal Investigator: Alavi, S. Duration: 12/01/12 - 05/31/13.
- CHS FOUNDATION GRANT. 2012. \$10,000. K-State Study Abroad Program: Agriculture and Food Processing in Southern Africa. Duration: 11/9/12 - 6/30/13.
- USDA FOREIGN AGRICULTURAL SERVICE - MICRONUTRIENT FORTIFIED FOOD AID PRODUCTS PILOT (MFFAPP). 2012. \$5,039,856. Novel sorghum-based fortified blended foods for

- infants and young children. Contract number # FFE-621-2012/033-00. Principal Investigators: Alavi, S., Lilja, N., Chambers, E., Lindshield, B., and Procter, S. Duration: 10/01/12 - 6/30/16.
- USDA FAS MICRONUTRIENT FORTIFIED FOOD AID PROJECT PILOT (MFFAPP) SUBCONTRACT. 2012. \$178,204. Enhancing food aid programs by optimizing Ultra Rice. Principal Investigator: PATH, Seattle, WA. Duration: 1/01/12 - 11/30/12.
 - PEPSICO. 2011. \$21,860. Confidential sponsored project. Principal Investigator: Alavi, S. Duration: 10/15/11 - 12/15/11.
 - MGP INGREDIENTS. 2011. \$70,000. Confidential sponsored project. Principal Investigator: Alavi, S. Duration: 8/1/11 - 7/31/13.
 - USDA INTERNATIONAL SCIENCE AND EDUCATION GRANT. 2011. \$149,633. Raising the Global Intelligence Quotient of U.S. workforce via food security and agricultural value addition in Mozambique. Principal Investigators: Alavi, S., and Lilja, N. Duration: 9/1/11 - 8/31/14.
 - LOTUS PETFOOD 2011. \$30,000. Confidential sponsored project. Principal Investigators: Alavi, S., and Aldrich, G. Duration: 8/1/11 - 7/31/13.
 - KANSAS GRAIN SORGHUM COMMISSION 2011. \$37,140. Novel sorghum based food products for infant, young children and adult nutrition. Principal Investigators: Alavi, S., Plattner, B., and Maichel, E. Duration: 3/1/11 - 9/30/11.
 - UNITED SORGHUM CHECKOFF PROGRAM 2010. \$59,725. Utilization of sorghum ingredients and co-products in aquatic animal feed production. Principal Investigator: Alavi, S. Duration: 3/1/11 - 2/29/12.
 - UNITED SORGHUM CHECKOFF PROGRAM 2010. \$59,450. Sorghum soy blends (SSB) as a food aid product. Principal Investigator: Alavi, S. Duration: 3/1/11 - 2/29/12
 - WENGER MANUFACTURING 2010. \$5,000. Novel extruded cereal-soy blends for infant, young children and adult nutrition. Principal Investigator: Alavi, S. Duration: 3/1/11 - 2/29/12
 - OFFICE OF INTERNATIONAL PROGRAMS INTERNATIONAL INCENTIVE GRANT 2010. \$2,000. Support for meeting with new partner university in India – Mahatma Gandhi University, Kottayam. Principal Investigator: Alavi, S. Duration: 9/15/10 - 1/31/11
 - K-STATE SOUTH ASIA PROJECT MINI GRANT 2010. \$3,000. Study abroad class to India as part of South Asia curriculum. Principal Investigators: Alavi, S. Duration: 3/15/10 - 9/15/10.
 - KANSAS SOYBEAN COMMISSION 2010. \$36,970. Novel soy-based savory snacks using extrusion processing. Principal Investigators: Alavi, S., Adhikari, K., and Tang, X. Duration: 7/1/10 - 6/30/11.
 - K-STATE CENTER FOR SUSTAINABLE ENERGY 2009. \$13,000. Novel thermo-mechanical pre-treatment and downstream technologies for efficient ethanol production from lignocellulosic biomass. Principal Investigator: Alavi, S. Duration: 8/1/09 - 7/31/10.
 - KANSAS SOYBEAN COMMISSION FY10. \$35,530. Premium texturized soybean protein by extrusion processing - product quality from different formulations and processing parameters. Principal Investigators: Alavi, S., and Cheng, E. Duration: 7/1/09 - 6/30/10
 - KSU ENGAGEMENT INCENTIVE GRANT 2008. \$11,200. Development and promotion of healthy snack products for school children. Principal Investigators: Sajid Alavi, Koushik Adhikari, Tanadalayo Kidd and Nancy Muturi. Duration: 1/15/09 - 1/14/11.
 - KSU FACULTY-LED STUDY ABROAD INCENTIVE GRANT INITIATIVE 2008. \$6,000. Agriculture and Food Processing in North India. A three-credit study abroad course in Summer 2010. Principal Investigators: Sajid Alavi and Hulya Dogan.
 - GREAT PLAINS SORGHUM IMPROVEMENT AND UTILIZATION CENTER 2008. \$ 23,840. New uses for sorghum in food and non-food applications using extrusion processing. Principal Investigator: Sajid Alavi. Duration: 8/1/08 - 7/31/09.
 - USDA-NRI COMPETITIVE GRANT 2008. \$498,130. Development of cross-linked bio-nanocomposite packaging films with enhanced barrier and mechanical properties. Principal Investigators: Sajid Alavi, Qixin Zhong (U of Tennessee), K.P. Sandeep (NC State) and Xiaozhi

Tang. Duration: 09/01/2008 – 08/31/2011.

- KANSAS SOYBEAN COMMISSION FY09. \$35,730. Bioenergy from soybean hulls - efficiency and economics of different pretreatment processes. Principal Investigators: Sajid Alavi, Buddhi Lamsal, Vincent Amanor-Boadu and Ron Madl. Duration: 7/1/08 - 6/30/09.
- PEPSICO, INC. 2008. \$37,880. Confidential sponsored project. Principal Investigator: Sajid Alavi. Duration: 04/16/08 - 12/15/08.
- USDA-FAS AGRICULTURAL KNOWLEDGE INITIATIVE (AKI) PROGRAM ON EXTRUSION TECHNOLOGY COLLABORATIONS WITH INDIA 2007. \$50,000. Novel whey protein and fruit-based expanded snacks using extrusion processing. Principal Investigators: Sajid Alavi and Syed Rizvi (Cornell University). Duration: 01/01/08 – 12/31/07.
- USDA-FAS NORMAN E. BORLAUG INTERNATIONAL AGRICULTURAL SCIENCE AND TECHNOLOGY FELLOW PROGRAM 2007. \$44,946. Novel Fruit and Vegetable-Based Expanded Snacks Using Extrusion Processing. Principal Investigator: Sajid Alavi. Duration: 10/01/07 - 09/30/08.
- FRITOLAY, INC. 2007. \$32,000. Confidential sponsored project. Principal Investigator: Sajid Alavi, Yomgcheng Shi and Hulya Dogan. Duration: 08/01/07 - 10/31/07.
- GREAT PLAINS SORGHUM IMPROVEMENT AND UTILIZATION CENTER FY08. \$23,090. New uses for sorghum in food and non food applications using extrusion processing. Principal Investigator: Sajid Alavi. Duration: 7/1/07 - 6/30/08.
- KANSAS SOYBEAN COMMISSION FY08. \$34,215. Investigation of soybean hull as a value-added feedstock for bioenergy and biomaterials. Principal Investigators: Sajid Alavi, Buddhi Lamsal, Ron Madl, Jon Faubion and Virgil Smail. Duration: 7/1/07 - 6/30/08.
- KANSAS WHEAT COMMISSION FY08. \$36,823. Investigation of wheat cellulosic material as feedstock for bioenergy and biomaterials. Principal Investigators: Sajid Alavi, Buddhi Lamsal, Ron Madl and Jon Faubion. Duration: 7/1/07 - 6/30/08.
- GREAT PLAINS SORGHUM IMPROVEMENT AND UTILIZATION CENTER FY07. \$23,090. Interaction between food additives and sorghum grain composition on quality of sorghum food products. Principal Investigator: Sajid Alavi. Duration: 7/1/06 - 6/30/07.
- KANSAS WHEAT COMMISSION FY06. \$28,836. Wheat-Based Pre-Cooked Flours Using Low Shear Twin-Screw Extrusion Processing. Principal Investigators: Sajid Alavi, Tom Herald and Ron Madl. Duration: 7/1/05 - 6/30/06.
- AGRICHEM, INC. 2004. \$20,000. Confidential sponsored project. Principal Investigators: Sajid Alavi, Keith Behnke. Duration: 1 year.
- AGRICULTURAL EXPERIMENTAL STATION, KSU 2004. \$27,000. Differential scanning calorimeter instrumentation grant. Principal Investigator: Sajid Alavi.
- KELLOGGS COMPANY. 2004. \$2,628. Confidential sponsored project. Principal Investigator: Sajid Alavi. Duration: 6 months.
- USDA-NRI COMPETITIVE GRANT 2003. \$249,000. Phase transition analysis and non-invasive imaging for understanding microstructure formation in biopolymeric foams. Principal Investigators: Sajid Alavi, Susan Sun, Syed Rizvi (Cornell University). Duration: 9/1/03 – 8/31/06.
- THE ANDERSONS RESEARCH GRANT PROGRAM (NC-213) 2003. \$ 40,000. Development and implementation of a thermal death kinetic model for management of Indian Meal Moth and Red Flour Beetle in food processing environments. Principal Investigators: Bhadriraju Subramanyam, Sajid Alavi and Fangneng Huang. Duration: 2 years.
- MIDWEST ADVANCED FOOD MANUFACTURING ALLIANCE, USDA 2003. \$33,000. Suitability of maize and sorghum for dry milling and extrusion processing. Principal Investigators: Tim Herrman, Sajid Alavi and Kyung-Min Lee. Duration: 1 year.

Professional Meeting Presentations and Abstracts (131 from 2002-15; 32 invited)

- Thatte, A., Manepalli, P., Sharma, C., Thomas, S., Kalarikkal, N., and Alavi, S. 2015. Preparation and characterization of Starch/PVOH/Laponite RD films for biodegradable food packaging. AACC International Annual Meeting, October 18 - 21, Minneapolis, MN. (Oral presentation)
- Zhou, T., Alavi, S., and Phebus, R. 2015. Role of high-intensity-preconditioner in pet food safety. IFT Annual Meeting and Expo, July 11-14, Chicago, IL. (Poster presentation).
- Alavi, S. 2014. 'Synthetic meat'? - Advances in texturization and extrusion of cereal and legume protein. AACC International Annual Meeting, October 5 - 8, Providence, RI. (**Invited symposium oral presentation**).
- Joseph, M., Zhu, L., Adedeji, A., Gwartz, J., and Alavi, S. 2014. Adaptation of conventional wheat flour milling system to refine sorghum, corn and cowpea grains. AACC International Annual Meeting, October 5 - 8, Providence, RI. (Poster presentation; Finalist, Engineering & Processing Division Student Paper Competition).
- Zhu, L., Lewis, L., Jones, C., Shi, Y.-C., and Alavi, S. 2014. A comparative study of two testing methods for degree of gelatinization in pelleted animal feed. AACC International Annual Meeting, October 5 - 8, Providence, RI. (Poster presentation).
- Adedeji, A., Joseph, M., and Alavi, S. 2014. Micronutrient fortified extruded rice kernels: Impact of processing and formulation on physico-chemical attributes. AACC International Annual Meeting, October 5 - 8, Providence, RI. (Poster presentation).
- Manepalli, P., Dogan, H., Mathew, L., and Alavi, S. 2014. Stochastic study of flow and expansion of starch-based melts during extrusion – Model development and validation. AACC International Annual Meeting, October 5 - 8, Providence, RI. (Oral presentation).
- Putarov, T.C., Sa, F.C., Carciofi, A.C., Joseph, M., and Alavi, S. 2014. Sorghum-based extruded pet food: impact of particle size and process conditions on physico-chemical attributes, AACC International Annual Meeting, October 5 - 8, Providence, RI. (Oral presentation).
- Manikantan, M.R., Joseph, M., Patwa, A., Alavi, S., and Ambrose, K. 2014. Effect of coconut flour incorporation on operative rheological properties of cereal flours. American Society of Agricultural and Biological Engineers Annual International Meeting, July 13-16, Montreal, Canada. (Oral Presentation).
- Alavi, S. 2013. Extrusion technology as a means for promoting millets. Global Consultation on Millets, December 18-20, Hyderabad, India. (**Invited oral presentation**).
- Alavi, S. 2013. Better utilization of millets – The U.S. model. Global Consultation on Millets, December 18-20, Hyderabad, India. (**Invited oral presentation**).
- Kumar, J., Karkle, E., Alavi, S., Adhikari, K., and Kidd, T. 2013. Knowledge, attitudes, and behavior towards snacking and health in Northeast Kansas school children and their parents. 141st American Public Health Association Annual Meeting and Expo, November 2-6, Boston, MA. (Oral Presentation).
- Alavi, S. 2013. Retention of antioxidants during extrusion cooking of cereal foods. AACC International Annual Meeting, September 29 - October 2, Albuquerque, NM. (**Invited symposium oral presentation**).
- Manepalli, P. H., Garg, A., Dogan, H., Mathew, J., and Alavi, S. 2013. Mathematical modeling of flow behavior and cell structure formation during extrusion . AACC International Annual Meeting, September 29 - October 2, Albuquerque, NM. (Poster presentation; 1st Place, Engineering & Processing Division Student Paper Competition).
- Alavi, S. 2013. Extrusion Processing - Basics. II Congresso sobre Tecnologia da Produção de

Alimentos para Animais (Second Congress on Technology of Production of Food for Animals), September 3-4, Maringa, Brazil. **(Invited oral presentation)**.

- Alavi, S. 2013. Extrusion Processing – Aquatic Feed. II Congresso sobre Tecnologia da Produção de Alimentos para Animais (Second Congress on Technology of Production of Food for Animals), September 3-4, Maringa, Brazil. **(Invited oral presentation)**.
- Alavi, S. Pet food extrusion at K-State – Research capabilities. Rendering Summit, August 21, Manhattan, KS. **(Invited oral presentation)**.
- Kumar, J., Karkle, E., Alavi, S., Adhikari, K., and Kidd, T. 2013. Comparing hedonic responses of middle school children towards healthy and unhealthy snack food. 10th Pangborn Sensory Science Symposium, August 11-15, Rio de Janeiro, Brazil. . (Poster presentation).
- Zhu, L., Adedeji, A., and Alavi, S. 2013. Utilization of germinated wheat in extruded nutritional products: Digestibility, bio-functional compounds and sensory analysis. IFT Annual Meeting and Expo, July 13-16, Chicago, IL. (Poster presentation).
- Adedeji, A., Zhu, L., Padmanabhan, N., and Alavi, S. 2013. Digestibility and micronutrient retention of micronutrient-fortified extruded sorghum soy blends. IFT Annual Meeting and Expo, July 13-16, Chicago, IL. (Poster presentation).
- Padmanabhan, N., Adedeji, A., Zhu, L., and Alavi, S. 2013. Physicochemical properties of newly developed extruded sorghum soy blends for U.S. food-aid programs. IFT Annual Meeting and Expo, July 13-16, Chicago, IL. (Poster presentation).
- Joseph, M., Adedeji, A., and Alavi, S. 2013. A novel delivery mechanism for nutrition using sorghum-based extruded pre-cooked ‘beans’. IFT Annual Meeting and Expo, July 13-16, Chicago, IL. (Poster presentation).
- Alavi, S. 2013. Extrusion processing - Fundamentals and research applications. Nanjing University of Finance and Economics, June 17, Nanjing, China. **(Invited oral presentation)**.
- Alavi, S. 2013. Overview of extrusion research at Kansas State University. Jiangnan University, Wuxi, China. **(Invited oral presentation)**.
- Alavi, S. 2013. Value-added utilization of grain sorghum. Institute of Agro-Products Processing Science and Technology, Chinese Academy of Agricultural Sciences (CAAS), June 19, Beijing, China. **(Invited oral presentation)**.
- Alavi, S. 2013. Innovations in Extrusion - Configuring a multi-operation, low-shear, semi-cold process for novel and nutritious products. SAAFoST Pretoria Branch Meeting, May 30, Pretoria, S. Africa. **(Invited oral presentation)**.
- Gibson, M., and Alavi, S. 2013. Starch gelatinization and amylose-lipid complexation during processing of baked and extruded pet foods. Petfood Forum, April 15-17, Chicago, IL. (Poster presentation).
- Roberts, R., Alavi, S., and Aldrich, G. 2013. Effect of rework inclusion on processing and final product characteristics of pet food. Petfood Forum, April 15-17, Chicago, IL. (Poster presentation).
- Graham, N., Beyer, R.S., Aldrich, G., and Alavi, S. 2013. Value-added agriculture by-products: Isolation of cellulose by thermal-mechanical extrusion methods. Petfood Forum, April 15-17, Chicago, IL. (Poster presentation).
- Padmanabhan, N., Joseph, M., Adedeji, A., Zhu, L., and Alavi, S. 2013. Novel nutrition delivery mechanisms and strategic partnerships for implementation in US food aid programs. Universities Fighting World Hunger Summit, March 2-4, Kansas City, MO. (Oral presentation).
- Padmanabhan, N., Joseph, M., Adedeji, A., Zhu, L., and Alavi, S. 2013. Novel nutrition delivery mechanisms and strategic partnerships for implementation in US food aid programs. Universities Fighting World Hunger Summit, March 2-4, Kansas City, MO. (Poster presentation).

- Zhou, Y., Fang, X., Davis, D.A., Adedeji, A.A., and Alavi, S. 2013. Growth of juvenile Pacific white shrimp *Litopenaeus vannamei* fed diets containing different levels of sorghum co-products (DDGS) using extrusion and pelleting methods. Aquaculture 2013: Striking a Chord for Sustainable Aquaculture, February 21-25, Nashville, TN USA. (Oral presentation).
- Alavi, S., Garg, A., Gajula, H., and Dogan, H. 2012. Reducing oil uptake in extruded snacks—Mechanisms for fat absorption and distribution in a cellular matrix. AACC International Annual Meeting, September 30 - October 3, Hollywood, FL. **(Invited symposium oral presentation)**.
- Alavi, S., Adedeji, A., Joseph, M., and Plattner, B. 2012. Innovations in extrusion—Configuring a multioperation, low-shear, semi-cold process for novel and nutritious products. AACC International Annual Meeting, September 30 - October 3, Hollywood, FL. **(Invited symposium oral presentation)**.
- Padmanabhan, N., Adedeji, A., Olson, V., Chambers, E., and Alavi, S. 2012. Novel sorghum-based fortified blended food for infants, young children, and adults. AACC International Annual Meeting, September 30 - October 3, Hollywood, FL. (Oral presentation; 1st Place, Engineering & Processing Division Student Paper Competition).
- Khamis, M., Kodavali, S., Dogan, H., and Alavi, S. 2012. Extrusion of wheat flour fractions to improve functionality and add value. AACC International Annual Meeting, September 30 - October 3, Hollywood, FL. (Oral presentation).
- Adedeji, A.A., Yangen, Z., Davis, A., and Alavi, S. 2012. Utilization of sorghum co-product (DDGS) in aquatic feed production. AACC International Annual Meeting, September 30 - October 3, Hollywood, FL. (Poster presentation).
- Adedeji, A. A., Joseph, M., Plattner, B., Maichel, E., and Alavi, S. 2012. Novel sorghum based bean like product-bean analog. AACC International Annual Meeting, September 30 - October 3, Hollywood, FL. (Poster presentation).
- Gibson, M., Aldrich, G., and Alavi, S. 2012. Physical differences between baked and extruded pet foods. AACC International Annual Meeting, September 30 - October 3, Hollywood, FL. (Poster presentation).
- Kodavali, S., Adhikari, K., and Alavi, S. 2012. Effects of soy protein isolate, calcium carbonate, and pregelatinized wheat starch on oil uptake and texture of soy based snacks. AACC International Annual Meeting, September 30 - October 3, Hollywood, FL. (Poster presentation).
- Alavi, S., and Adedeji, A. 2012. Value-added utilization of grain sorghum and its co-products via extrusion. 2012 Great Plains Sorghum Conference & 29th Sorghum Research and Utilization Conference, August 28-30, Manhattan, KS. **(Invited oral presentation)**.
- Garg, A., Mitchell, P., Padmanabhan, N., Alavi, S., and Dogan, H. 2012. Modeling of microstructure formation and oil-uptake during frying of expanded extrudates. IFT Annual Meeting and Expo, June 25 - 28, Las Vegas NV. (Poster presentation).
- Roberts, R., Alavi, S., Maningat, O., and DeMeritt, G. 2012. Relationship between wheat gluten rheology and physicochemical properties of texturized vegetable protein. IFT Annual Meeting and Expo, June 25 - 28, Las Vegas, NV. (Oral presentation).
- Khamis, M., Kodavali, S., Dogan, H., Alavi, S., and Wilson, J. 2012. Effect of extrusion on physicochemical properties of wheat flour fractions. IFT Annual Meeting and Expo, June 25 - 28, Las Vegas NV. (Poster presentation).
- Alavi, S., Ali, S., Tang, X., and Faubion, J. 2012. Natural polymer nanocomposites from blends. 1st International Conference on Polymers in Packaging Applications (ICPPA2012), March 31-April 2, Kottayam, India. **(Invited oral presentation)**.
- Alavi, S. 2012. Nutrition and food security through processed foods. 3rd International Grains Conference, May 1, New Delhi, India. **(Invited oral presentation)**.
- Alavi, S. 2012. Research and development in agricultural value-addition – Transferable technologies. Workshop on Food Security and Agricultural Value-Addition in Mozambique: Challenges and Solutions, February 27-29, Maputo, Mozambique. **(Invited oral presentation)**.

- Alavi, S. 2012. International Best Practices on Usage of Wheat - Nutrition and Food Security through Processed Foods. 6th International Seminar on Wheat & Wheat Products: Moving Towards Food & Nutrition Security, February 9-11, New Delhi, India. **(Invited oral presentation)**.
- Alavi, S. 2011. Food security and value addition: International experiences. KSU Vernon Larson International Lecture. December 6. Manhattan, KS. **(Invited oral presentation)**.
- Kodavali, S., and Alavi, S. 2011. Moisture and oil uptake during processing of soy-based extruded snacks. AACC International Annual Meeting, October 16-19, Palm Springs, CA. Cereal Foods World 56:A49. (Poster presentation).
- De Mesa-Stonestreet, N.J.E., Alavi, S., Dogan, H., and Faubion, J. 2011. Rheological properties of sorghum protein concentrates produced by extrusion-enzyme liquefaction. AACC International Annual Meeting, October 16-19, Palm Springs, CA. Cereal Foods World 56:A37. (Poster presentation).
- Alavi, S., Karkle, E., Giannetta, F., and Dogan, H. 2011. Enhancement of antioxidant capacity and dietary fiber profile of expanded snacks utilizing fruit and vegetable pomaces. AACC International Annual Meeting, October 16-19, Palm Springs, CA. Cereal Foods World 56:A6. **(Invited symposium oral presentation)**.
- Bell, B., Adhikari, K., Chambers, E., Alavi, S., and King, S. 2011. Do spices affect emotions? A study with an extruded cereal product. The 9th Pangborn Sensory Science Symposium, September 4-8, Toronto, Canada. (Poster presentation).
- De Mesa-Stonestreet, N.J.E., and Alavi, S. 2011. Pilot-scale production of sorghum protein concentrates using extrusion-enzyme liquefaction. IFT Annual Meeting and Expo, June 11 - 14, New Orleans, LA. (Oral presentation).
- Tang, X., and Alavi, S. 2011. Understanding mechanical and barrier properties of starch, polyvinyl alcohol, and layered silicate nanocomposite films utilizing mathematical models 2011 IFT Annual Meeting, June 11 - 14, New Orleans LA. IFT Annual Meeting and Expo, June 11 - 14, New Orleans, LA. (Poster presentation).
- Tang, X., and Alavi, S. 2011. Structure and properties of starch/polyvinyl alcohol/multiwalled carbon nanotube nanocomposites. IFT Annual Meeting and Expo, June 11 - 14, New Orleans, LA. (Poster presentation).
- Karkle, E., Keller, L.C., Dogan, H., and Alavi, S. 2011. Extent of matrix transformation in fiber-added extrudates under different hydration regimens and impact on texture, microstructure, and digestibility. IFT Annual Meeting and Expo, June 11 - 14, New Orleans, LA. (Poster presentation).
- Alavi, S. 2011. Value added processing of soybean ingredients for food and nonfood applications. Kansas Soybean Expo, Jan 12. Topeka, Kansas. **(Invited oral presentation)**.
- Alavi, S. 2010. Food processing in the developing world – challenges and opportunities with special focus on India and Southern Africa. KSU International Agriculture Brownbag Seminar. December 2, Manhattan, KS. **(Invited oral presentation)**.
- Alavi, S. 2010. Extrusion processing – Research and engagement for addressing nutritional challenges worldwide. AACC International Annual Meeting, October 24-27, Savannah, GA. Cereal Foods World 55(4):A18. **(Invited oral presentation; Young Research Scientist Award)**.
- Karkle, E. L., Alavi, S., Dogan, H., Shi, Y., and Keller, L.C. 2010. Impact of cellular architecture and solid matrix properties on the texture of high fiber expanded foods. AACC International Annual Meeting, October 24-27, Savannah, GA. Cereal Foods World 55(4):A25. **(Oral presentation)**.
- Yoo, J., Alavi, S., Amanor-Boadu, V., and Vadlani, P. 2010. Systematic investigation of thermo-mechanical extrusion processing as pretreatment method for ethanol production from soybean hull and sorghum stover. AACC International Annual Meeting, October 24-27, Savannah, GA. Cereal Foods World 55(4):A34. (Oral Presentation).
- Ali, S., Alavi, S., and Faubion, J. 2010. Starch/poly vinyl alcohol/ Na⁺ MMT based biodegradable

nanocomposites produced through melt extrusion. AACC International Annual Meeting, October 24-27, Savannah, GA. *Cereal Foods World* 55(4):A36. (Poster presentation; 2nd Place, Engineering & Processing Division Student Paper Competition).

- Tang, X., and Alavi, S. 2010. Structure and properties of poly (vinyl alcohol)/starch/laponite RD nanocomposite films. AACC International Annual Meeting, October 24-27, Savannah, GA. *Cereal Foods World* 55(4):A71. (Poster presentation).
- Alavi, S. 2010. Soy extrusion processing technologies. Soy Innovation Africa. August 26-27, 2010 Cape Town, South Africa. **(Invited oral presentation)**
- De Mesa-Stonestreet, N.J.E., Alavi, S., Adhikari, K., Maichel, E., and Huppert, T. 2010. Premium texturized soybean protein by extrusion processing - A systematic investigation of processing parameters and formulations. International Union of Food Science and Technology (IUFoST) Annual Meeting, August 23-25, Cape Town, South Africa. (Poster presentation).
- Alavi, S. 2010. Grain sorghum utilization in food applications - Ongoing research at K-State. 2010 Great Plains Sorghum Conference & 27th Biennial Sorghum Research and Utilization Conference, August 11-12, Mead, NE. **(Invited oral presentation)**
- De Mesa-Stonestreet, N.J.E., Alavi, S., and Gwartz, J. 2010. Sorghum protein concentration by extrusion-enzyme liquefaction: A process optimization study. IFT Annual Meeting and Expo, July 18-21. Chicago, IL. (Poster presentation).
- Giannetta, F., Karkle, E., Alavi, S., Madl, R., and Vadlani, P. 2010. Physical properties and antioxidant activity of wheat-based extruded snacks with apple and tomato pomaces. IFT Annual Meeting and Expo, July 18-21. Chicago, IL. (Poster presentation).
- Tang, X., Devi, N.L., Shobha, S., Ali, S.S., Alavi, S., and Dogan, H. 2010. Development of protein-rich sorghum-based expanded snacks using extrusion technology. IFT Annual Meeting and Expo, July 18-21. Chicago, IL. (Poster presentation).
- Yoo, J., Alavi, S., Vadlani, P., and Amanor-Boadu, V. 2010. Thermo-mechanical extrusion processing as a pretreatment for efficient ethanol production from soybean hulls. K-State Center for Sustainable Energy Meeting, May 6, Manhattan, KS. (Poster presentation; First prize 2009-10 CSE Graduate Assistantship Awards).
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- Alavi, S. 2007. Production—what’s new and innovative. Petfood Forum 2007, Apr. 16-18, Chicago, IL. **(Invited Oral Presentation)**
- Alavi, S. 2007. Extrusion processing - Adding value to cereal grains for food and industrial applications. International Conference on 21st Century Challenges to Sustainable AgriFood Systems, Mar. 15-17, Bangalore, India. **(Invited Oral Presentation)**

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- Liu, S. and Alavi, S. 2006. Production of snack food with Moringa leaf powder using extrusion processing. Institute of Food Technologists Annual Meeting, June 23-28, Orlando, FL. Book of Abstracts. (Poster presentation)
- Agbisit, R.N., Cheng, E.M., and Alavi, S. 2006. Interrelationships among physical, thermal flow, microstructure and mechanical properties of extruded cornstarch-whey protein foams. Institute of Food Technologists Annual Meeting, June 23-28, Orlando, FL. Book of Abstracts. (Poster presentation)
- Cho, K.Y., Alavi, S., and Rizvi, S.S.H. 2006. Microstructures of steam-expanded and SCFX extrudates using 3-D non-invasive image analysis. Institute of Food Technologists Annual Meeting, June 23-28, Orlando, FL. Book of Abstracts. (Poster presentation)
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- Alavi, S. 2006. Dry processing's impact on palatability. Focus on Palatability. Petfood Forum 2006, Apr. 5-6, Chicago, IL. **(Invited Oral Presentation)**
- Alavi, S. 2006. Extruded products-technology and scope. International Seminar on Wheat and Wheat Products – Emerging Trends and Opportunities, Mar. 7-8, Delhi, India. **(Invited Oral Presentation)**
- Alavi, S. 2005. Thermal death kinetics models for food disinfection. Symposium on 'Thermal Death Kinetic Models: Theory and Applications', Entomological Society of America Annual Meeting, Fort Lauderdale, FL, Dec. 2005. **(Invited Oral Presentation)**.
- Cheng, E., Agbisit, R., Alavi, S., and Pearson, T. 2005. Mechanical-acoustic and sensory evaluations of extruded food foams. AACC Annual Meeting, Orlando, FL, Sep. 2005. (Oral Presentation)
- Singh, H., Bean, S., Alavi, S., and Tang, X. 2005. Use of ultrasound and extrusion processing to improve the nutritional and functional quality of sorghum flour. AACC Annual Meeting, Orlando, FL, Sep. 2005. (Poster Presentation)
- Alavi, S. 2005. Extrusion processing for grain-based food products. Milling and Baking Show, Mar. 9-13, Delhi, India. **(Invited Oral Presentation)**
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- Alavi, S., and Trater, A. 2003. Microstructure characterization of biopolymer foams using non-invasive X-ray tomography. Eight Conference of Food Engineering. AIChE Annual Meeting, Nov. 16-21, San Francisco, CA. Proceedings (AIChE Pub. No. 192) p. 324-333. (Oral Presentation)
- Trater, A.M. and Alavi, S.H. 2003. Use of phase transition analysis and non-invasive imaging to study structure formation in biopolymeric foams. Institute of Food Technologists Annual Meeting, July 12-16, Chicago, IL. Book of Abstracts. (Poster presentation)