Osvaldo Campanella

Ph.D. University of Massachusetts - 1987

Professor

Agricultural and Biological Engineering
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Faculty Scholar - 2007

Research Areas:
Food Process Engineering. Food Rheology, Food Extrusion, evaporation. Food processes simulation

Classes Taught:

ABE 202 – Thermodynamics of Biological Systems II
ABE 303 – Applications of Physical Chemistry to Biological Processes

Selected Publications (last 5 years):

Chen, G., Corvalan, C., Campanella, O.H. and Haley, T.A. 2005. An improved Method to Estimate Temperatures and Lethality During the Cooling Stage of Sterilized Cylindrical Cans. Trans IChemE, Part C ,Food and Bioproducts Processing, 83, 36-42.

Haddish-Berhane, N., Nyquist, C., Haghighi, K., Corvalan, C., Keshavarzian, A., Campanella, O., Rickus, J. and Farhadi, A. 2006. A multiscale stochastic model for polymer-coated targeted drug delivery systems. Journal of Controlled Release, 110, 314-322.

Ross K.A., Pyrak-Nolte L.J. and Campanella, O.H. 2006. The effect of mixing conditions on the material properties of an agar gel - microstructural and macrostructural considerations. Food Hydrocolloids, 20(1), 79-87.

Chen, G., Campanella, O.H., and Corvalan, C.M. 2007. A numerical algorithm for calculating microbial survival curves during thermal processing. Food Research International, 40, 203-208.

Mert, B. and Campanella, O.H. 2007. Monitoring the rheological properties and solid content of selected food materials contained in cylindrical cans using audio frequency sound waves. Journal of Food Engineering, 79 (2): 546-552.

Carcione, J.M, Campanella, O.H and Santos, J.E. 2007. A poroelastic model for wave propagation in partially frozen orange juice. Journal of Food Engineering, 80(1), 11-17.

Chen, G., Corvalan, C.M., Kim, Y., Haley, T.A., and Campanella, O.H. 2007. Development and validation of a numerical heat transfer model for post-packaged pasteurization of sliced bologna. International Journal of Modeling, Identification and Control, (in press).

Chen, G., Campanella, O.H., and Purkayastha, S. 2007. A dynamic model of crosslinked corn starch granules swelling during thermal processing. Journal of Food Engineering, 8, 500-507.

Mert, B., Gonzalez, D. and Campanella, O.H. 2007. A new method to determine viscoelastic properties of corn grits during and cooking and drying. Journal of Cereal Science, 46(1), 32-38.

Chen, G, Campanella, O.H. and Peleg, M. 2007. Calculation of the total lethality of conductive heat in cylindrical cans sterilization using linear and non linear survival kinetic models. Critical Reviews in Foods and Nutrition.

Mejia, C.D., Gonzalez, D.C., Mauer, L.J., Campanella, O.H. and Hamaker, B.R. 2007. Breaking the paradigm of breadmaking - maize proteins made to function as wheat gluten to be submitted to Nature Letter.

L. Hailemariam, M.R. Okos and O.H. Campanella. 2007. A Mathematical Model for the Isothermal Growth of Bubbles in Wheat Dough. Journal of Food Engineering, 82(4), 466-477.

Gandolph J., Chen. G., Weiss, I., Perchonok D. M., Wijeratne, W., Fortune, S, Corvalan, C., Campanella, O., Okos, M., and Mauer, L.J. 2007. Foods for a Mission to Mars: Equivalent System Mass and Development of a Multipurpose Small-Scale Seed Processor. World of Food Science, Vol. 2, October 2007 www.worldfoodscience.org .

Chen, G., Campanella, O.H., Corvalan, C.M. and Haley, T.A. 2008. On-line Correction of Process Temperature Deviations in Continuous Retorts. Journal of Food Engineering, 84(2), 258-269.

Kim, Y.R., Cornillon P., Campanella, O.H., Stroshine R.L., Lee, S., and Shim, J.Y. 2008. Small and Large Deformation Rheology for Hard Wheat Flour dough as influenced by mixing and resting. Journal of Food Science, 73(1), E1-E8.

Jebson, J, Chen, H. and Campanella, O.H. Fouling in a Centritherm Evaporator with Whey Solutions. 2008. Heat Transfer Engineering (in press).

Mert, B. and Campanella, O.H. 2008. The study of the mechanical impedance of foods and biomaterials to characterize their linear viscoelastic behavior at high frequencies. Rheologica Acta, 47, 727-737.

Chen, G., Corvalan, C.M., Kim, Y., Haley, T.A., and Campanella, O.H. 2007. Development and validation of a numerical heat transfer model for post-packaged pasteurization of sliced bologna. International Journal of Modeling, Identification and Control, (in press).

Amy L Penner, A.L., Hailemariam, L., Okos, M. and Campanella, O. 2008. Lateral growth of a wheat dough disk under various growth conditions. Journal of Cereal Science (in press).