



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 303 – Applications of Physical Chemistry to Biological Processes
ABE 308 – Heat and Mass Transfer
ABE 591 – Numerical Methods for Biological Sciences
FS 69000 – Polysaccharide Analysis

Selected Publications:

Ayala-Soto, F.E., Campanella, O.H., Serna-Saldivar, S.O. and Welti-Chanes, J. 2016. Changes in the structure and gelling properties of maize fiber arabinoxylans after their pilot scale extraction and spray-drying. *Journal of Cereal Science*, 70, 275-281.

Campanella, O.H. 2016. Editorial overview: Food physics and material science. *Current Opinion in Food Science*, 9, vii-ix.

Chen, J., Miao, M., Campanella, O., Jian Bo and Jin, Z. 2016. Biological macromolecule delivery system for improving functional performance of hydrophobic nutraceuticals. *Current Opinion in Food Science*, 9, 56-61.

Demirkesen, I., Puchulu-Campanella, E., Kelkar, S., Campanella, O.H., Sumnu, G. and Sahin, S. 2016. Production and characterisation of gluten-free chestnut sourdough breads. *Quality Assurance and Safety of Crops & Foods*, 8, 349-358.

Eren, N.M., Narsimhan, G and Campanella, O.H. 2016. Protein adsorption induced bridging flocculation: the dominant entropic pathway for nano-bio complexation. *Nanoscale*, DOI: 10.1039/C5NR06179B.

Feng, T., Zhu, X. and Campanella, O. 2016. Molecular modeling tools to characterize the structure and complexation behavior of carbohydrates. *Current Opinion in Food Science*, 9, 62-69.

Guo, W. and Campanella, O.H. 2017. A relaxation model based on the application of fractional calculus for describing the viscoelastic behavior of potato tubers. *Transactions of ASABE*, 60, 259-264.

Khalef, N., Campanella, O. and Bakri, A. 2016. Isothermal calorimetry: methods and applications in food and pharmaceutical fields. *Current Opinion in Food Science*, 9, 70-76.

Kahn, J.L., Eren, N.M., Campanella, O.H., Voytik-Harbin, S.L. and Rickus, J.L. 2016. Collagen-fibril matrix properties modulate the kinetics of silica polycondensation to template and direct biomineralization. *Journal of Material Research*, DOI: 10.1557/jmr.2016.5.

Tarhan, O., Spotti, M.J, Schaffter, S., Corvalan, C.M. and Campanella, O.H. 2016. Rheological and structural characterization of whey protein gelation induced by enzymatic hydrolysis. *Food Hydrocolloids*, 61, 211-220.

Tao, F., Ke, W, Jinjie, Z., Bhopatkar, D., Chen, F. Campanella, O.; Hamaker, B. R.; Carignano, M.; Zhuang H. 2017. Molecular dynamics simulation of self-assembling process of ternary nanoparticle. *Transactions of the Chinese Society of Agricultural Engineering*, 33, 300-306.

Taylor, J.R.N., Taylor, J., Campanella, O.H. and Hamaker, B.R. 2016. Functionality of the storage proteins in gluten-free cereals and pseudocereals in dough systems. *Journal of Cereal Science*, 67, 22-34.

Spotti, M.J.; Tarhan, O., Schaffter, S., Corvalan, C.M. and Campanella, O.H. 2017. Whey protein gelation induced by enzymatic hydrolysis and heat treatment: Comparison of creep and recovery behavior. *Food Hydrocolloids*, 63, 696-704.

Wang, L.Q., Ma, S.F., Jia, C., Patel, B., Campanella, O., You, L.Q., Yang, S.C. and Liu, D. 2017. The Effects of Calcium Propionate and Cinnamaldehyde on the Mechanical, Physical and Antimicrobial Properties of Composite Films Based on Potato Starch. *Journal of Biobased Materials and Bioenergy*, 10, 176-183.

Selected Presentations:

Extrusion for food and non-food materials, University of St Paulo, Brazil June 6, 2016
Seminar Using soft matter concepts and modeling: An approach to understand the behavior of foods University of Campinas, Brazil, July 6 2016
IFT Annual Meeting Chicago July 2016 – Symposium on Extrusion Technology
Conference of Food Engineering (COFE) Section Chair and presentation, September 2016, Ohio State University
12-hour Course in the University of Naples, December 2016, Italy