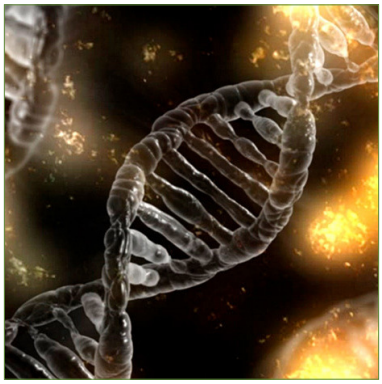
Keynote Forum
October 25, 2018

Food Technology 2018
Biotechnology 2018







3rd International Conference on
Food Science & Technology
World Congress on
Biotechnology & Medical Microbiology
October 25-26, 2018 | Frankfurt, Germany

Conly Hansen

Utah State University, USA

Conversion of lignocellulose including biosolids and green waste to biogas

Lignocellulosic biomass is the most abundantly available raw material on the Earth for the production of biofuels. The conversion of lignocellulose into renewable energy and more valuable chemicals has been limited. Several methods for increasing the conversion of lignocellulose into energy by pretreating the feedstock have been developed, but all of the existing methods have large economic penalties, e.g. disposal of toxic wastes and greatly increased capital and operating costs. The discovery and characterization of Caldicellulosiruptor microbes; extremophilic organisms capable of solubilizing lignocellulose, suggested a possible solution to the economic problem of pretreatment. Beginning in 2014, recognizing the potential for anaerobic digestion of lignocellulose for biogas production, a multidisciplinary team including a biochemist, chemist, microbiologist and agricultural engineer, from Brigham Young and Utah State Universities has been conducting experiments to determine if we could break down lignocellulose feedstocks for later anaerobic digestion. The definition of breakdown in this case means conversion of organic solids in a high temperature vessel (175°C) containing Caldicellulosiruptor bescii into a type of tea that contains mostly acetate and lactate in water. Results to date indicate nearly 90% breakdown in 18 – 24 hrs of certain plant materials including grass and leaves collected at municipal sanitary landfills. Perhaps the most significant results were that brewery waste that is somewhat refractory to anaerobic treatment could be partially broken down (50%) and even aerobic sludge from a wastewater treatment plant that was previously anaerobically digested in a mesophilic process and sun dried could be further broken down (additional nearly 40% destruction).This presentation will report the results of work we have done to take the process from the lab to the market; the hurdles to scaling and commercializing the anaerobic digestion of lignocellulose in an economically viable way.

Speaker Biography

Conly Hansen has completed his PhD in Agricultural Engineering from the Ohio State University and joined as a Project Engineer for United States Army (discharged as Captain). At present, he is working as a Professor and Graduate Program Director at Center for profitable uses of Agricultural Byproducts, USA. He has published more than 56 research articles in reputed journals along with 6 book and presented more than 38 presentations with abstracts in national/international conference/symposia. He has around 14 significant honors on his name.

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Magnus S Magnusson

University of Iceland, Iceland

T-patterns and external memory in human and protein mass-societies: The naked ape suddenly a string-controled citizen

This talk presents a self-similar pattern type called T-pattern, a kind of statistical pseudo fractal recurring with significant translation symmetry on a single discrete dimension. It now comes with a specialized detection (evolution) algorithm implemented as the software THEMETM for Windows which has allowed the discovery of numerous and complex interaction patterns in many kinds of human and animal interactions as well as in neuronal interactions within living brains. T-patterns have also been detected in interactions between robots and humans and seem characteristic for the structure of DNA and text. A definition of T-patterns is presented as well as the essentials of the current detection algorithms including examples of detected T-patterns using the especially developed T-pattern diagrams. The T-pattern is now a part of a larger set of pattern types and relations called T-system that will be shortly described including examples of patterning detected with specially developed algorithms also implemented in Theme. The potential importance of T-patterns is finally illustrated through a comparison between human mass societies and the mass societies of proteins within biological cells (sometimes called "Cell City"), where self-similarity of organization evolved over billions of years is striking from nano to human scales based on self-similar T-patterns, but appearing suddenly among large-brain animals in humans only, and partly based on massively copied standardized T-patterned letter strings such as holy, legal and scientific texts. The invention of writing and thus a durable external T-patterned memory only a few thousand years ago -- a biological eye-blink -- is apparently by far the greatest game changer in the history of homo sapiens allowing the explosive development of science, technology and the only large-brained mass-societies as cultural heritage became mostly external to brains. The analogy and self-similarity are striking with the invention of DNA by the RNA world countless millions of years ago.

Speaker Biography

Magnus S Magnusson is a Research Professor. He completed PhD in 1983 from the University of Copenhagen. He is an author of the T-pattern model. He presented numerous papers and invited talks at international mathematical, neuroscience, proteomics, bioinformatics and science of religion conferences and at leading universities in Europe, USA and Japan. He is a Deputy Director during 1983-1988 at Anthropology Laboratory, Museum of Natural History, Paris and repeatedly invited temporary Professor in Psychology and Ethology (Biology of Behavior) at the University of Paris (V, VIII & XIII). Since 1991, he is the Founder and Director of the Human Behavior Laboratory, University of Iceland, in formalized collaboration between 28 European and American universities based on "Magnusson's analytical model" initiated at University René Descartes Paris V, Sorbonne, in 1995.

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Alessandro Leone[1]

Roberto Romaniello[1] and Antonia Tamborrino[2]

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Combined machines by using ultrasounds, microwave and heat exchanger to improve the olive paste conditioning: Impact on olive oil quality and yield

In this paper an industrial combined plant assembled by a low frequency ultrasound device, a microware apparatus and a heat exchanger were employed and implemented in an industrial olive oil plant to improve the conditioning of the olive paste. Four different conditioning conditions were compared to the traditional one. The extractability index (E), rheological parameters and olive oil quality were determined. The use of only the heat exchanger for the conditioning of the olive paste leads to a low value of extractability. By placing in series the heat exchanger and the traditional malaxed, it is possible to obtain the same quantitative performances, reducing the conditioning time from 40 min to 20 min. By using a microwave system in series with a heat exchanger, it is possible to reduce the conditioning time considerably to just 4 min, obtaining an entirely continuous process. Combining heat exchanger, microwave, ultrasound an slight increase of extractability was found. Finally the use of alternative conditioning technologies, alone or in combination, are able to save the lipophilic antioxidant furniture while, on the contrary, brought to a reduction of hydrophilic antioxidant. The cavitation effect of ultrasound is able to overcome this drawback

Speaker Biography

Alessandro Leone is an Associate Professor in agricultural mechanics and food processing plants, SAFE department, engineering area, University of Foggia, where he teaches mechanics and mechanization in agricultural, food engineering and work safety. His major research topics are, in food processing plants: agro-food industry plants and process settings, processing logic control, recovery of agro-food waste by-products to useful composts in agriculture, as well as waste management and in agricultural mechanics: Analysis of the vibrations transmission mode from the vibrating heads to the trunk of olive trees and subsequent optimization; study, design of mobile elevating work platforms; safety devices on tractors and machinery.

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Keynote Forum
October 26, 2018

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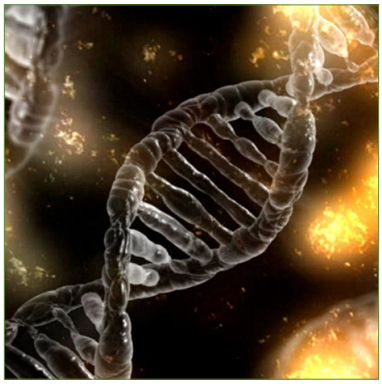

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Desineni Subbaram Naidu

University of Minnesota Duluth, USA

Fusion of hard and soft control strategies for a smart prosthetic/robotic hand

There are now over 20 million people in the world with missing limbs resulting from combat and non-combat operations and by 2050 there will be 50 million amputees all over the world. The availability of artificial limbs will help these people to lead a better normal life. The overall goal of the research on Prosthetic Hand Technology is to develop a smart prosthetic hand using intelligent strategies for electromyographic (EMG) signal extraction, analysis, identification, kinematic synthesis, and embedded hierarchical real-time systems and control by fusion of soft computing and hard computing techniques. The fusion of soft and hard control synergetic strategy alleviates the present problems associated with prosthetic devices. The presentation is based on Professor Naidu's recent TED Talk on 3-D Printed Prosthetic Hand for the World and his new research book published in October 2017 by the IEEE Press - Wiley (Series on Systems Science and Engineering) titled, "Fusion of Hard and Soft Control Strategies for a Robotic Hand".

Speaker Biography

Desineni Subbaram Naidu received MTech and PhD degrees in Electrical Engineering (with specialization in Control Systems Engineering), from Indian Institute of Technology (IIT), Kharagpur. He taught, visited and/or conducted research at IIT; as National Research Council (NRC) Senior Research Associate at Guidance and Control Division at NASA Langley Research Center, Hampton, VA; Old Domain University, Norfolk, VA; as Professor, Associate Dean and Director, School of Engineering at Idaho State University and Measurement and Control Engineering Research Center, Pocatello, Idaho; as National Research Council (NRC) Senior Research Associate at Center of Excellence in Advanced Flight Research at United States (US) Air Force Research Laboratory, Wright Patterson Air Force Base (WPAFB), Ohio; Visiting Research Professor at the University of Western Australia in Perth, Center for Industrial and Applied Mathematics at the University of South Australia in Adelaide; as Visiting Professor at the Center for Applied and Interdisciplinary Mathematics at East China Normal University, Shanghai, China; as Visiting Professor at the Institute of Systems Science, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing, China; Shanghai Jiao-Tong University, Shanghai, China. Since August 2014, he has been with University of Minnesota Duluth as Minnesota Power Jack Rowe Endowed Chair. He received twice the Senior National Research Council (NRC) Associateship award from the US National Academy of Sciences (NAS) and is an elected (Life) Fellow of the Institute of Electrical and Electronic Engineers (IEEE) and an elected Fellow of the World Innovation Foundation, United Kingdom. He has over 200 journal and conference publications including 8 books. He has been on the editorial boards of several journals including the IEEE Transactions on Automatic Control and Optimal Control: Applications and Methods (Wiley).

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Ajita Tiwari

Karlsruhe Institute of Technology, Germany

Comparative study of different drying techniques on quality attributes of TASHE (*Cyathea gigantea*)

North east India is a rich and vibrant source of many indigenous plant produce. Because of lack of proper connectivity to the rest of India, local problems, language barriers and lack of proper infrastructure, many important plants and their parts are un-utililized though having high medicinal values and functional properties too. Tashe (Cyathea gigantea) is one among them species of tree fern. Due to high moisture content, it is difficult to store it for long period. Thus drying is most suitable means to reduce the moisture content but to retain its functional as well as medicinal properties three different types of drying techniques were taken into consideration namely sun, solar and tray drying. Solar drying was found to retain better quality of the dumplings of Tashe compared to those dried using Sun drying and tray dryer. Protein and carbohydrate content retention under solar drying was (1.25% and 61.85%) compared to tray drying (1.17% and 61.23%) and sun drying (1.12% and 60.66%). Antioxidant (% scavenging activity) retention under solar drying was (22.69%) compared to tray drying (19.47%) and sun drying (18.26%). By analyzing the effect on drying of tashe dumplings on the loss of moisture, overall colour change, retention of functional properties and sensory quality, it could be concluded that tray drying followed by solar is the best method and also at minimum cost and time (330 mins).

Speaker Biography

Ajita Tiwari is an Assistant Professor in the Department of Agricultural Engineering at Assam University Silchar (A central University), Assam, India. Presently working as Guest Scientist in LVT, Karlsruhe Institute of Technology, Karlsruhe, Germany. She has acquired proficiency in the field of postharvest processing through her experience in food industry, research, and teaching by working at the National and International level for more than 12 years, with particular experience in the production and quality control of processed food products exdrudate RTE snacks. She has published 1 books (National) 2 book chapters (both International), more than 25 research papers in national and international journals as well as many conference (National and International level) papers. Professor Tiwari acquired her bachelor degree in Agricultural Engineering from JNKVV, Jalbalpur, master's degree in Postharvest Process and Food Engineering from GBPUA&T, Pantnagar, and PhD in Food Process Engineering from Indian Agricultural Research Institute, New Delhi, India.

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