

THE 8TH ANNUAL INTERNATIONAL CONFERENCE 2018 ON HEALTH & LIFE SCIENCES

Connecting the world through innovation
and sustainable development

September 12-14, 2018
Banda Aceh, Indonesia



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PROGRAM

The 8th AIC on Health and Life Sciences

**The Annual International Conference 2018
Syiah Kuala University**

***“Connecting the World through Innovation and
Sustainable Development”***

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FROM FOOD MICROBIOLOGICAL ANALYSIS BY CULTURE TO THE LIBERATION OF DNA SEQUENCING AND BEYOND: DEVELOPMENTS, CHALLENGES AND FUTURE TRENDS IN REFERENCE METHODS AND INDUSTRY STANDARDS

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Abstract

Rapid developments in sequencing technology along with falling cost brought widespread opportunities and changes in food microbiological analysis. Long term established practices and analytical 'gold standards', such as food analysis by culture and microbiological typing with PFGE or MLST, change or could be made redundant. The completion of the human genome draft back in 2000 required a decade of international collaboration and billions of dollars, however, nowadays bacterial genomes can be sequenced in hours for less than \$100 with what is collectively termed as 'next generation sequencing' technology. The increasing accessibility to sequencing whole genomes and ability of laboratories to identify, and differentiate bacterial and viral strains, reform the practice and expectations in managing quality and safety in food industry. While next generation sequencing is still shaping, 3rd generation sequencing is in progress and bringing ultimate portability. Further emerging technologies such as user-friendly bioinformatics software tools, next-generation robotics, novel sensor materials and drones, start making their way to food analysis applications. While government authorities and global industries have taken initiative, the majority of food industry lacks awareness and capability to fully understand the benefits, issues and future challenges in the changes of conducting food microbiological analysis. Therefore, the lecture will attempt a review of practices and methods that underlined the industry microbiology standard up to date, recent developments that change the way of work and coming technological opportunities and challenges that are expected to shape the future.

Keywords: microbiological typing, next generation sequencing, third generation sequencing, emerging technologies, bioinformatics.

Keynote Speaker - Profile



Dr. Konstantinos "Kostas" Gkatzionis is Assistant Professor at the School of Chemical Engineering, University of Birmingham (UK) since 2013 with focus on food science. Before moving to Birmingham, he has benefited from being exposed to a number of industries, universities and cultural environments throughout his career. Kostas Gkatzionis received his Bachelor's degree in food technology from ATEI, Thessaloniki, Greece and worked as food technologist and quality control manager in food industry. He completed his Ph.D. degree at the Division of Food Sciences, University of

Nottingham, UK, and has held appointments as a KTP associate with Pepsico (2008) and research associate with the University of Northampton (2009). Throughout his academic career, he has supervised >10 doctoral and >35 M.Sc. projects and post-doctoral researchers and is involved in teaching, at both undergraduate and post-graduate level, a variety of subjects including food safety, hygiene and management Masters.

Dr Kostas Gkatzionis' teaching and research take a multidisciplinary approach in applied research addressing industrial problems and challenges as well as fundamental investigations. His group investigates areas of formulation, processing, microbiology and safety. He has been involved in a number of successful research and infrastructural grants totalling ~ 4.5million euros including Horizon 2020, UK research council funding, iNETs and industry funding. Dr Kostas Gkatzionis is member of the BBSRC Peer Review Panel (subject food safety) and his academic citizenship includes links to and collaborations with Asia and Africa as well as partnerships within the EU, materialised through joint consortia, projects and consultancy with industries, academic institutions and food SMEs.

He is also a reviewer in the following international journals: Journal of Food Composition and Analysis; Food Chemistry; International Dairy Journal; Food and Bioproducts Processing; Food Processing and Preservation; Food and Bioprocess Technology; Critical Reviews in Microbiology; International Journal of Food Microbiology; Journal of Nanobiotechnology; International Food Research Journal; Food Research International; Journal of Applied Research on Medicinal and Aromatic Plants.

SUBJECTIVE WORK FATIGUE AND RELATED FACTORS ON SILUNGKANG WEAVERS

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ABSTRACT

Silungkang weavers generally work with standing and often bend over long periods of time which can lead to fatigue and health problems. The objective of this research is to know the factors related to subjective work fatigue on the weaving workers in Silungkang Village West Sumatra. The method of this research is analytic observational with cross sectional study design. The population in this study is the entire workforce of silungkang weaving. Data were collected using questionnaire and observation method and processed using chi-square statistical test with 95% confidence interval. The result showed that 60.4% of workers were fatigue, 52.1% of workers had heavy workload, 77.1% were laborers with long service period, and 75% work with non ergonomic attitude. There is a relationship between workload ($p = 0,009$) and work attitude ($p = 0,001$) with subjective fatigue. There is no relationship between period of service ($p = 0,448$) with subjective work fatigue. There is a relationship between workload and work attitude with subjective work fatigue on Silungkang Weavers. It is expected the industry to do the control effort by giving the training about the ergonomic work attitude while doing the job and stretching at the beginning of feeling sore on the body.

Keywords: subjective, work fatigue, weaver.



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