

# Bithika Saha

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## CAREER PROFILE

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- Six years of research and laboratory experience in food technology and wine science
- Achieved technical knowledge of new product development through the experimentation of wine
- Demonstrated required physical and chemical analyses to ensure highest quality of developed products
- Experienced in operating different food processing equipment and analytical instruments
- Capable in successful completion of multiple projects within time and budget
- Developed excellent interpersonal and communication skill through working multi-disciplinary teams

## RELEVANT PROJECTS

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### Optimisation of drying parameters for banana and carrot (2014-2019)

- Developed a two-layer drying model including shrinkage for banana and carrot
- The depletion of banana flavour and beta-carotene degradation were analysed using GCMS and HPLC
- The degradation pattern of flavour and nutrient was modelled as a function of drying temperature and time
- Developed a tool for determination of optimal level of critical operational variables using response surface methodology.

### Development of reduced alcohol wines including chemical and sensory analysis (2011-2013)

- Reduced ethanol content in three different wines using reverse osmosis and evaporative perstraction process
- Utilised headspace solid phase micro extraction gas-chromatography and mass spectrometry (HS-SPME/GC-MS) technology to develop a method to analyse 27 important wine aroma compounds.
- Conducted a consumer preference trial to determine consumers' liking for reduced ethanol wine and original wine.
- Performed statistical analysis to relate the chemical analysis with consumers' preference

## PROFESSIONAL SKILLS

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- Food processing equipment: heat pump dryer, cabinet dryer and tray dryer, membrane separation process
- Analytical instruments: GCMS, HPLC, UV-Spectrophotometer,
- Other instruments: Alcoholyzer and density meter, SO2 analyser, pH meter, Auto-titrator for pH and TA measurement, different types of auto pipetter, vacuum oven, hygrometer, refractometer
- Instrumental softwares: Lab solution software, Thermal Qual Browser, MSD chemstation
- Statistics: SPSS
- MS Office: Word, Excel and PowerPoint

## EDUCATION

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Degree	University	Outcome	Years
• PhD in Food Science and Technology	UNSW	3 publications	2014-2019
• MPhil in Agriculture and Wine Science	CSU	2 publications	2011-2013
• BSc in Chemical Engineering	BUET	9 <sup>th</sup> out of 60	2004-2009

## OTHER EXPERIENCE

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### Food processing course demonstrator at UNSW (2015-2017)

- General lab maintenance and preparation of instruments and chemicals for students
- Demonstrated and supervised students during lab experiments
- Report marking

### Chemistry course demonstrator at CSU (2012-2013)

- Supervising students to teach different chemistry experiments
- Report and exam paper marking

### Research Assistant for Chick pea sensory evaluation project at CSU (2013-2014)

- Assisting in preparation of samples for descriptive sensory analysis
- Communicate and train the consumer panel for the evaluation
- Assisting in analysing the sensory data

## AWARDS

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- APA PhD scholarship at UNSW 2014-2017
- APA MPhil scholarship at CSW 2011-2013
- Merit and Technical scholarship at BUET 2005-2009

## PUBLICATIONS

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### Journal article

- Saha, B., Torley, P., Blackman, J. W. and Schmidtke, L. M. (2013) Review of processing technology to reduce alcohol levels in wines, Proceedings for the colloquium on alcohol reduction of wines, ISVV, Villenave d'Ornon, France
- Saha, B., Jiang, C., Arcot, J. and Driscoll, R. (2017) Incorporation of Shrinkage into Two Layer Diffusion Model for Air Drying, KMITL Science and Technology Journal, Thailand.
- Saha, B., Bucknall, M., Arcot, J. and Driscoll, R. (2017) Derivation of two layer drying model with shrinkage and analysis of volatile depletion during drying of banana. Journal of Food Engineering.
- Saha, B., Bucknall, M., Arcot, J. and Driscoll, R. (2017) Profile Changes in Banana Flavour Volatiles During Low Temperature Drying, Journal of Food research International
- Saha, B., Longo, R., Torley, P., Saliba, A., & Schmidtke, L. (2018). SPME Method Optimized by Box-Behnken Design for Impact Odorants in Reduced Alcohol Wines. Foods (Basel, Switzerland), 7(8), 127. doi:10.3390/foods7080127

### Conference presentation

- Food Innovation Asia Conference, Bangkok, Thailand, June 2017- Oral presentation
- Crush 2012 The wine and grape science symposium, Nov, 2012, Adelaide, Australia. Oral presentation
- Engineering Postgraduate Symposium, Sep, 2017, University of New South Wales (UNSW) – Oral presentation

## REFEREES

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