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Professor Ashraf Ismail

Correspondence language: English

Sex: Male

Date of Birth: 7/30

Canadian Residency Status: Canadian Citizen

Country of Citizenship: Canada

Contact Information

The primary information is denoted by (*)

Address

Primary Affiliation (*)

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Protected when completed

Professor Ashraf Ismail

Language Skills

Language	Read	Write	Speak	Understand	Peer Review
English	Yes	Yes	Yes	Yes	Yes
French	Yes	No	Yes	Yes	No

Degrees

- 1985/9 - 1987/7 Post-doctorate, NSERC Postdoctoral Fellowship, Chemistry, Ecole Nationale Supérieure de Chimie de Paris
Degree Status: Completed
Supervisors: Dr. Gérard Jaouen, 1985/9 - 1987/8
- 1978/9 - 1985/9 Doctorate, Ph.D. (Science), Chemistry, McGill University
Degree Status: Completed
Transferred to PhD without completing Masters?: Yes
- 1975/9 - 1978/5 Bachelor's, Bachelor of Science, Biochemistry, McGill University
Degree Status: Completed

User Profile

Researcher Status: Researcher

Engaged in Clinical Research?: No

Research Interests: Microbial identification and strain typing by FTIR and NMR spectroscopy; FTIR analysis of agri-food and pharmaceutical products; applications of infrared imaging spectroscopy in the study of food systems; application of biomolecular spectroscopy to the study of protein function and functionality

Fields of Application: Foundations and Knowledge Acquisition, Public Health, Industrial Manufacturing and Production

Disciplines Trained In: Biology and Related Sciences, Chemistry

Areas of Research: Enzymes and Proteins, Structure and Macroscopic Characterization, Agri-food Transformation Products, Microorganisms, Nutraceuticals and Functional Foods

Research Specialization Keywords: FTIR spectroscopy, NMR spectroscopy, infrared imaging, active packaging, milk analysis, protein structure, food proteins, microbial identification, microbial typing, pharmaceutical process monitoring

Research Disciplines: Chemistry, Biology and Related Sciences

Employment

1999/6	Associate professor Food Sciences and Agricultural Chemistry, Macdonald Campus, McGill University Full-time Tenure Status: Tenure
1994/9 - 1999/5	Assistant professor Food Sciences and Agricultural Chemistry, Macdonald Campus, McGill University Full-time Tenure Status: Tenure Track
1991/11 - 1994/9	Assistant professor (Special Category) Food Sciences and Agricultural Chemistry, Macdonald Campus, McGill University Full-time Tenure Status: Non Tenure Track
1990/5 - 1991/9	Research Associate Steacie Institute for Molecular Sciences, National Research Council Canada
1990/4 - 1991/9	Adjunct professor Food Sciences and Agricultural Chemistry, Macdonald Campus, McGill University Part-time Tenure Status: Non Tenure Track
1987/9 - 1990/5	Auxiliary professor Chemistry, Main Campus, McGill University Full-time Tenure Status: Non Tenure Track
1985/9 - 1987/8	Postdoctoral Fellow Chimie, ENSCP, École Nationale Supérieure de Chimie de Paris Full-time Tenure Status: Non Tenure Track

Affiliations

The primary affiliation is denoted by (*)

(*) 1999/6 Associate professor, Food Sciences and Agricultural Chemistry, McGill University

Research Funding History

Awarded [n=5]

2019/4 - 2024/3
Principal Applicant Exploration of new approaches to microbial typing and phenotypic characterization based on Fourier transform infrared and high-resolution magic-angle spinning NMR spectroscopy and the development of active packaging employing natural antimicrobials, Grant

Funding Sources:

2019/4 - 2024/3 Natural Sciences and Engineering Research Council of Canada (NSERC)
Discovery Grant
Total Funding - 140,000 (Canadian dollar)
Portion of Funding Received - 140,000
Funding Competitive?: Yes

2020/3 - 2022/2 Principal Applicant	Integration of near-infrared spectroscopy-based process analytical technology with a bench-scale continuous manufacturing process for an omega-3 phospholipid pharmaceutical product, Grant
	Funding Sources: 2020/3 - 2022/2 Natural Sciences and Engineering Research Council of Canada (NSERC) Collaborative Research and Development Total Funding - 395,900 (Canadian dollar) Portion of Funding Received - 395,900 Funding Competitive?: Yes
2019/5 - 2021/4 Principal Applicant	Développer un outil rapide qui permet la standardisation des ingrédients naturels et des produits et matières premières afin d'assurer une homogénéité dans leurs applications en dépit de la variabilité naturelle, Grant
	Funding Sources: 2019/5 - 2021/4 Réseau précompétitif McGill-CTAQ Total Funding - 150,000 (Canadian dollar) Portion of Funding Received - 150,000 Funding Competitive?: No
2016/7 - 2019/6 Co-applicant	Développement de bioindicateurs dans le lait pour prédire le niveau de confort et de santé des vaches laitières, Grant
	Funding Sources: 2016/7 - 2019/6 Fonds de recherche du Québec - Nature et technologies (FRQNT) Programme de recherche en partenariat pour l'innovation en production et en transformation laitières Total Funding - 260,000 (Canadian dollar) Portion of Funding Received - 60,000 Funding Competitive?: Yes
	Co-applicant : Raj Duggavathi; Xin Zhao; Principal Applicant : Elsa Vasseur
2018/10 - 2019/3 Principal Applicant	Feasibility of near-infrared spectroscopy as a process analytical tool for inline/online control of manufacturing of an omega-3 phospholipid concentrate pharmaceutical product, Grant
	Funding Sources: 2018/10 - 2019/3 Natural Sciences and Engineering Research Council of Canada (NSERC) Engage Grant Total Funding - 25,000 (Canadian dollar) Portion of Funding Received - 25,000 Funding Competitive?: Yes
Completed [n=16]	
2019/5 - 2019/11 Principal Applicant	Rapid, reagent-free technology for identification of methicillin-resistant Staphylococcus aureus (MRSA) and vancomycin-resistant enterococci (VRE) in clinical microbiology labs, Grant

Funding Sources:

2019/5 - 2019/11 Natural Sciences and Engineering Research Council of Canada (NSERC)
Idea to Innovation - Phase 1b
Total Funding - 60,000 (Canadian dollar)
Portion of Funding Received - 60,000
Funding Competitive?: Yes

2016/7 - 2018/6 Analyse du lait à la ferme par la spectroscopie infrarouge (IR-TF ou FTIR): un outil de gestion de la qualité, Grant
Principal Applicant

Funding Sources:

2016/7 - 2018/6 Ministère Agriculture, Pêcheries et Alimentation (MAPAQ) (QC)
Programme InnovAction
Total Funding - 50,000 (Canadian dollar)
Portion of Funding Received - 50,000
Funding Competitive?: Yes

2017/1 - 2018/3 Development of active packaging based on natural Canadian extracts and essential oils, Grant
Principal Applicant

Funding Sources:

2017/1 - 2018/3 McGill-CTAQ (Conseil de la Transformation Alimentaire du Quebec)
Precompetitive Network on Shelf-Life Extension of Products and Ingredients
Total Funding - 78,000 (Canadian dollar)
Portion of Funding Received - 78,000
Funding Competitive?: No

2017/4 - 2018/3 Microbial identification by attenuated total reflectance-Fourier transform infrared (ATR-FTIR) spectroscopy, Grant
Principal Applicant

Funding Sources:

2017/4 - 2018/3 bioMérieux sa (France)
Industry-sponsored research grant
Total Funding - 330,000 (Canadian dollar)
Portion of Funding Received - 330,000
Funding Competitive?: No

2016/10 - 2017/10 Rapid, reagent-free technology for identification of methicillin-resistant Staphylococcus aureus (MRSA) and vancomycin-resistant enterococci (VRE) in clinical microbiology labs, Grant
Principal Applicant

Funding Sources:

2016/10 - 2017/9 Natural Sciences and Engineering Research Council of Canada (NSERC)
Idea to Innovation - Phase 1
Total Funding - 122,750 (Canadian dollar)
Portion of Funding Received - 122,750
Funding Competitive?: Yes

2016/3 - 2016/6 Market Assessment Study for a rapid, reagent-free technology for identification of antibiotic-resistant bacteria by ATR-FTIR spectroscopy, Grant
Principal Applicant

Funding Sources:

2016/3 - 2016/6 Natural Sciences and Engineering Research Council of Canada (NSERC)
Idea to Innovation - Market Assessment Study
Total Funding - 12,000 (Canadian dollar)
Portion of Funding Received - 12,000
Funding Competitive?: No

2009/4 - 2015/3 FTIR spectroscopic studies of food proteins and enzymes, Grant, Operating
Principal Investigator

Funding Sources:

2009/4 - 2015/3 Natural Sciences and Engineering Research Council of Canada (NSERC)
Discovery Grant
Total Funding - 220,000 (Canadian dollar)
Portion of Funding Received - 220,000
Funding Competitive?: Yes

2011/9 - 2014/8 Design, development, and validation of a soil analyzer based on mid-infrared spectroscopy, Grant
Principal Applicant

Funding Sources:

2011/9 - 2014/8 Ministère de l'Agriculture, des Pêcheries & de l'Alimentation (MAPAQ) (QC)
Programme de soutien à l'innovation en agroalimentaire
Total Funding - 105,000 (Canadian dollar)
Portion of Funding Received - 105,000
Funding Competitive?: Yes

2011/5 - 2012/8 Novel milk-derived proteins with enhanced nutraceutical properties, Grant
Principal Applicant

Funding Sources:

2011/5 - 2012/8 Natural Sciences and Engineering Research Council of Canada (NSERC)
Idea to Innovation (I2I)
Total Funding - 112,000 (Canadian dollar)
Portion of Funding Received - 112,000
Funding Competitive?: Yes

2011/10 - 2012/3 Development and implementation of calibration models for on-line monitoring of bitumen extraction from oil sand tailings by Fourier transform near-infrared spectroscopy, Grant
Principal Applicant

Funding Sources:

2011/10 - 2012/3 Natural Sciences and Engineering Research Council of Canada (NSERC)
Engage
Total Funding - 25,000 (Canadian dollar)
Portion of Funding Received - 25,000
Funding Competitive?: Yes

2008/4 - 2011/12 Development of experimental protocols and traceable spectral databases for rapid identification of foodborne pathogens by infrared imaging spectroscopy, Grant, Operating
Principal Investigator

Funding Sources:

- 2008/4 - 2011/3 Agilent Technologies Inc.
Industry contribution to NSERC CRD project
Total Funding - 204,000 (Canadian dollar)
Portion of Funding Received - 204,000
Funding Competitive?: No
- 2008/4 - 2011/3 Natural Sciences and Engineering Research Council of Canada (NSERC)
Collaborative Research and Development
Total Funding - 402,000 (Canadian dollar)
Portion of Funding Received - 402,000
Funding Competitive?: Yes

2009/6 - 2011/5
Co-investigator

Centre de Bioreconnaissance et de Biocapteurs, Grant, Infrastructure

Funding Sources:

- 2009/4 - 2011/3 Fonds Québécois de la Recherche sur la Nature et les Technologies (FQRNT)
Regroupement FQRNT-Centre for Biorecognition and Biosensors
Total Funding - 450,000 (Canadian dollar)
Portion of Funding Received - 22,500
Funding Competitive?: Yes

Principal Applicant : Tabrizian , Maryam

2004/4 - 2009/3
Principal Investigator

FTIR spectroscopic studies of food proteins and enzymes, Grant, Operating

Funding Sources:

- 2004/4 - 2009/3 Natural Sciences and Engineering Research Council of Canada (NSERC)
Discovery grant
Total Funding - 165,000 (Canadian dollar)
Portion of Funding Received - 100
Funding Competitive?: Yes

2006/4 - 2007/4
Principal Investigator

Upgrading a Fourier transform infrared spectrometer for infrared imaging, Grant, Equipment

Funding Sources:

- 2006/4 - 2007/4 Natural Sciences and Engineering Research Council of Canada (NSERC)
Research Tools and Instruments
Total Funding - 105,000 (Canadian dollar)

Principal Investigator : A.A. Ismail

2003/5 - 2006/5
Co-investigator

Novel concepts in high-pressure processing of fish, Grant, Operating

Funding Sources:

- 2003/5 - 2006/5 Natural Sciences and Engineering Research Council of Canada (NSERC)
Strategic Projects-Group
Total Funding - 60,000 (Canadian dollar)

Principal Investigator : Ramaswamy, Hosahalli;A.A. Ismail, Dr. Hosahalli Ramaswamy

2004/5 - 2006/5
Principal Investigator

Differentiation of antimicrobial resistant organisms by FTIR spectroscopy, Grant, Operating

Funding Sources:

2004/5 - 2006/5 Conseil de Recherches en Pêche et en Agroalimentaire du Québec
 (CORPAQ)
 Food Safety
 Total Funding - 60,000 (Canadian dollar)

Principal Investigator : A.A. Ismail, Mme. Lorraine Gour, Dr. Marie Nadeau; Dr Pascal Michel

Student/Postdoctoral Supervision**Master's non-Thesis [n=17]**

2018/5 - 2018/8 Principal Supervisor	Yu, Fanglin (Completed) , McGill University Student Degree Start Date: 2018/5 Thesis/Project Title: Isolation and ATR-FTIR-based Identification of lactobacilli from cheese starter cultures Present Position: Student
2018/5 - 2018/8 Principal Supervisor	Liang, Yu (Completed) , McGill University Student Degree Start Date: 2018/5 Thesis/Project Title: Development of an ATR-FTIR spectral database of microbial pathogens Present Position: Student
2018/5 - 2018/8 Principal Supervisor	Sunny, Meera (Completed) , McGill University Student Degree Start Date: 2018/5 Thesis/Project Title: Development of multivariate calibration models for the determination of omega-3 fatty acids in krill oil by infrared spectroscopy Present Position: Student
2018/5 - 2018/8 Principal Supervisor	Dambalkar, Vaibhav (Completed) , McGill University Student Degree Start Date: 2018/5 Thesis/Project Title: Identification of microbial contaminants in milled flour by mass spectrometry Present Position: Student
2017/5 - 2017/9 Principal Supervisor	Li, Mengyin (Completed) , McGill University Student Degree Start Date: 2017/5 Thesis/Project Title: Development of gluten-free food products Project Description: Development of gluten-free food products Present Position: Unknown
2017/5 - 2017/9 Principal Supervisor	Zou, Yue (Completed) , McGill University Student Degree Start Date: 2017/5 Thesis/Project Title: Identification of molds and yeasts by ATR-FTIR spectroscopy Present Position: Unknown
2017/5 - 2017/9 Principal Supervisor	Liang, Yingsi (Completed) , McGill University Student Degree Start Date: 2017/5 Thesis/Project Title: Evaluation of the antimicrobial activity of essential oils against foodborne pathogens for active-packaging applications Project Description: Evaluation of the antimicrobial activity of essential oils against foodborne pathogens for active-packaging applications Present Position: Unknown

- 2016/5 - 2016/9
Principal Supervisor Wang, Chudi (Completed) , McGill University
Student Degree Start Date: 2016/5
Thesis/Project Title: Creation of an ATR-FTIR spectral database of gums and spices
Project Description: Creation of an ATR-FTIR spectral database of gums and spices
Present Position: Unknown
- 2016/5 - 2016/11
Principal Supervisor Chen, Shu (Completed) , McGill University
Student Degree Start Date: 2016/5
Thesis/Project Title: Development of an infrared-based sensor for the determination of the vapour pressure of essential oils
Project Description: Development of an infrared-based sensor for the determination of the vapour pressure of essential oils
Present Position: Unknown
- 2016/5 - 2016/9
Principal Supervisor Madzhidi, Fatona (Completed) , McGill University
Student Degree Start Date: 2016/5
Thesis/Project Title: Formulation and testing of biodegradable adjuvants containing natural antimicrobials for shelf-life extension of tomatoes
Project Description: Formulation and testing of biodegradable adjuvants containing natural antimicrobials for shelf-life extension of tomatoes
Present Position: Unknown
- 2016/5 - 2016/9
Principal Supervisor Torres Pina, Frida (Completed) , McGill University
Student Degree Start Date: 2016/5
Thesis/Project Title: Discrimination among yeast species by ATR-FTIR spectroscopy
Project Description: Discrimination among yeast species by ATR-FTIR spectroscopy
Present Position: QC manager
- 2016/5 - 2016/9
Principal Supervisor Ventura, Tamarra (Completed) , McGill University
Student Degree Start Date: 2016/5
Thesis/Project Title: Evaluation of the efficacy of selected volatile fractions of essential oils on shelf life extension of poultry products
Project Description: Evaluation of the efficacy of selected volatile fractions of essential oils on shelf life extension of poultry products
Present Position: Food scientist, Borduelle Americas Inc.
- 2015/5 - 2015/12
Principal Supervisor Choudhuri, Aniket (Completed) , McGill University
Student Degree Start Date: 2015/5
Student Degree Received Date: 2015/12
Thesis/Project Title: ATR-FTIR spectroscopic identification of clinical isolates
Present Position: QC manager
- 2015/5 - 2016/6
Principal Supervisor Bahadi, Mazen (Completed) , McGill University
Student Degree Start Date: 2015/5
Thesis/Project Title: Development of FTIR method for detection of milk adulteration
Present Position: Ph.D. student, McGill University
- 2012/9 - 2013/8
Principal Supervisor Gehlawat, Rakhi (Completed) , McGill University
Student Degree Start Date: 2012/9
Student Degree Received Date: 2013/9
Thesis/Project Title: Study of oleic acid- β -lactoglobulin interactions by ATR-FTIR spectroscopy
Present Position: QC chemist, Apotex Inc., Toronto

2012/5 - 2012/9
Principal Supervisor Gan, Qianjun (Completed) , McGill University
Student Degree Start Date: 2012/9
Thesis/Project Title: Determination of bitumen content in oil sand tailings by FTIR spectroscopy
Present Position: Financial analyst, TD Bank

2012/5 - 2012/9
Principal Supervisor He, Hongye (Completed) , McGill University
Student Degree Start Date: 2012/9
Thesis/Project Title: Infrared analysis of Quebec agricultural soils with the use of a variable-filter-array IR spectrometer
Present Position: Product Manager (Maple Leaf Foods, Saskatoon)

Master's Thesis [n=15]

2017/1 - 2018/8
Principal Supervisor Cheng, Meining (Completed) , McGill University
Student Degree Start Date: 2017/1
Thesis/Project Title: Investigation of inhibition of mold growth by essential oils
Project Description: Investigation of inhibition of mold growth by essential oils
Present Position: M.Sc. student, McGill university

2017/1 - 2018/6
Co-Supervisor Yao, Lang (Completed) , McGill University
Student Degree Start Date: 2017/1
Thesis/Project Title: Investigation of potential role of essential oils in active packaging of meat products
Project Description: Investigation of potential role of essential oils in active packaging of meat products
Present Position: Ph.D. student, McGill University

2015/9 - 2017/9
Principal Supervisor Langella, Michele (Completed) , McGill University
Student Degree Start Date: 2015/9
Thesis/Project Title: ATR-FTIR identification of Gram-positive bacteria in clinical isolates
Present Position: Unknown

2015/9 - 2017/5
Principal Supervisor Luo, Xiaoyu (Completed) , McGill University
Student Degree Start Date: 2015/9
Thesis/Project Title: Encapsulation of essential oils in whey protein microparticles and edible films
Present Position: Ph.D. student, University of Guelph

2015/9 - 2017/1
Principal Supervisor Lam, Tien My Lisa (Completed) , McGill University
Student Degree Start Date: 2015/9
Thesis/Project Title: ATR-FTIR spectroscopic discrimination of *Shigella* and *E. coli* strains
Present Position: Ph.D. student (McGill University)

2012/9 - 2014/1
Principal Supervisor Singh, Amandeep (Completed) , McGill University
Student Degree Start Date: 2012/9
Thesis/Project Title: Variable-temperature FTIR studies of the effects of oleic acid and ethanol on the secondary structure of β -lactalbumin
Present Position: HACCP Coordinator (Agropur, Chilliwack, B.C.)

2008/9 - 2010/9
Principal Supervisor Enfield, Alexander (Completed) , McGill University
Student Degree Start Date: 2008/9
Student Degree Received Date: 2010/9
Thesis/Project Title: Investigation of the high-throughput analytical performance of an FPA-FTIR imaging system
Present Position: Environmental chemist (Paracel Laboratories, Ottawa, Ontario)

- 2008/5 - 2009/8
Principal Supervisor Grygorczyk, Alexandra (Completed) , McGill University
Student Degree Start Date: 2008/1
Student Degree Received Date: 2009/9
Thesis/Project Title: Biophysical studies of milk protein interactions in relation to storage defects in high-protein beverages
Present Position: Research Scientist (Vineland Research and Innovation Centre, Ontario)
- 2006/9 - 2008/11
Principal Supervisor Haq, Moeed (Completed) , McGill University
Student Degree Start Date: 2005/1
Student Degree Received Date: 2008/9
Thesis/Project Title: Design and fabrication of a continuous-flow mixer for investigating protein folding kinetics by focal-plane-array FTIR spectroscopy
Present Position: Consultant (London, UK)
- 2005/5 - 2008/8
Principal Supervisor Pinchuk, Orley (Completed)
Student Degree Start Date: 2005/5
Student Degree Received Date: 2008/8
Thesis/Project Title: Differentiation between fungal species by FPA-FTIR spectroscopy
Present Position: R&D manager (Thermal-Lube Inc., QC, Canada)
- 2005/1 - 2006/9
Principal Supervisor Taqi, Marwa (Completed)
Student Degree Start Date: 2005/1
Student Degree Received Date: 2006/9
Thesis/Project Title: Differentiation between antimicrobial resistant microorganisms by FPA-FTIR spectroscopy
Present Position: Unknown
- 2003/9 - 2005/3
Principal Supervisor Aljundi, Nasser (Completed)
Student Degree Start Date: 2003/9
Student Degree Received Date: 2005/3
Thesis/Project Title: FTIR investigation of microwave-induced protein unfolding
Present Position: Unknown
- 2003/9 - 2005/3
Principal Supervisor Martinez, Sarah (Completed)
Student Degree Start Date: 2003/9
Student Degree Received Date: 2005/3
Thesis/Project Title: Application of intein-mediated protein ligation in isotope-edited FTIR spectroscopy
Present Position: Unknown
- 2001/9 - 2003/3
Principal Supervisor Khoury, Ziad (Completed)
Student Degree Start Date: 2001/9
Student Degree Received Date: 2003/3
Thesis/Project Title: FTIR and rheological studies of myosin gelation
Present Position: Entrepreneur (Baked2Go, Montreal)
- 1999/9 - 2001/3
Principal Supervisor Haque, Takrima (Completed)
Student Degree Start Date: 1999/9
Student Degree Received Date: 2001/3
Thesis/Project Title: Isotope-edited FTIR 2D correlation studies of ATCase
Present Position: Unknown
- Doctorate [n=17]**
Principal Supervisor Xin Di Zhu (In Progress)
Student Degree Start Date: 2019/7

- 2018/9 - 2021/8
Co-Supervisor Yao, Lang, McGill University
Thesis/Project Title: Typing of *Salmonella* and *E. coli* by ATR-FTIR spectroscopy for food surveillance applications
Present Position: Student
- 2018/1 - 2021/12
Principal Supervisor Lam, Tien My Lisa (In Progress) , McGill University
Student Degree Start Date: 2018/1
Thesis/Project Title: Bacterial typing by FTIR spectroscopy
Present Position: Ph.D. student, McGill University
- 2016/9 - 2019/9
Principal Supervisor Bahadi, Mazen (Completed) , McGill University
Student Degree Start Date: 2016/9
Thesis/Project Title: Development of an on-farm milk analyzer based on infrared spectroscopy
Project Description: Development of an on-farm milk analyzer based on infrared spectroscopy
Present Position: Ph.D. student, McGill University
- 2016/5 - 2019/12
Principal Supervisor Tsutsumi, Tamao (In Progress) , McGill University
Student Degree Start Date: 2016/5
Thesis/Project Title: Biomarker discovery for discrimination between antibiotic-resistant and susceptible staphylococci and enterococci
Project Description: Biomarker discovery for discrimination between antibiotic-resistant and susceptible staphylococci and enterococci
Present Position: Ph.D. student, McGill University
- 2015/9 - 2019/8
Principal Supervisor Tao, Ran (Completed) , McGill University
Student Degree Start Date: 2015/9
Thesis/Project Title: Applications of essential oils and soy protein-based edible films in active packaging
Present Position: Ph.D. student, McGill University
- 2013/9 - 2018/12
Principal Supervisor Kim, Hayline (In Progress) , McGill University
Student Degree Start Date: 2013/9
Thesis/Project Title: Discrimination of *E. coli* pathotypes by infrared imaging spectroscopy
Present Position: Returned from one-year maternity leave
- 2013/1 - 2017/4
Principal Supervisor Gan, Qianjun (Completed) , McGill University
Student Degree Start Date: 2013/1
Thesis/Project Title: Development of FTIR analytical methodologies for characterization and classification of agricultural soils and oil sand tailings
Present Position: Financial analyst, TD Bank
- 2009/9 - 2013/10
Principal Supervisor Nsonzi, Frances (Completed) , McGill University
Student Degree Start Date: 2009/9
Thesis/Project Title: Scaled-up production and biophysical studies of β -lactalbumin-oleic acid complexes cytotoxic to the L1210 (lymphocytic leukemia) cell line
Present Position: Consultant (Uganda)
- 2009/1 - 2015/1
Principal Supervisor Valtierra Rodriguez, Diana (Completed) , McGill University
Student Degree Start Date: 2009/1
Student Degree Received Date: 2015/8
Thesis/Project Title: FTIR investigations of whey protein interactions in relation to model food systems
Present Position: Entrepreneur (Baked2Go, Montreal)

- 2006/9 - 2011/12
Principal Supervisor Carranza, Laura (Completed) , McGill University
Student Degree Start Date: 2006/9
Student Degree Received Date: 2011/12
Thesis/Project Title: Standardization and internal validation of a bacteria identification method utilizing focal-plane-array FTIR spectroscopy
Present Position: Research Assistant (Borgess Health, Kalamazoo, Michigan)
- 2006/9 - 2010/12
Principal Supervisor Gomaa, Ahmed (Completed) , McGill University
Student Degree Start Date: 2006/9
Student Degree Received Date: 2010/12
Thesis/Project Title: An investigation of effects of microwave treatment on the structure, enzymatic hydrolysis, and nutraceutical properties of β -lactoglobulin
Present Position: Research Associate, Université Laval
- 2004/9 - 2009/5
Co-Supervisor Alvarez, Pedro (Completed) , McGill University
Student Degree Start Date: 2004/9
Student Degree Received Date: 2009/5
Thesis/Project Title: High-pressure induced gelation of globular proteins
Present Position: R&D scientist (Kellogg Co., Battle Creek, Michigan)
- 2003/5 - 2009/12
Principal Supervisor Ghetler, Andrew (Completed) , McGill University
Student Degree Start Date: 2004/1
Student Degree Received Date: 2009/12
Thesis/Project Title: Development of an expert system for the identification of bacteria by focal-plane-array Fourier transform infrared spectroscopy
Present Position: Research Scientist – New Product Development (Agilent Technologies, Santa Clara, California)
- 2003/5 - 2007/3
Principal Supervisor Kirkwood, Jonah (Completed) , McGill University
Student Degree Start Date: 2003/5
Student Degree Received Date: 2007/3
Thesis/Project Title: Identification of bacteria by FPA-FTIR spectroscopy
Present Position: Americas Spectroscopy Sales Manager & Canadian General Manager for Agilent Technologies Canada
- 1999/9 - 2003/3
Principal Supervisor Amiali, Nassim (Completed) , McGill University
Student Degree Start Date: 1999/9
Student Degree Received Date: 2003/3
Thesis/Project Title: Identification of antibiotic-resistant staphylococci by FTIR spectroscopy
Present Position: Consultant
- 1998/9 - 2003/3
Principal Supervisor Cocciardi, Robert (Completed)
Student Degree Start Date: 1998/9
Student Degree Received Date: 2003/3
Thesis/Project Title: Evaluation of single-bounce attenuated total reflectance/FTIR and 2D correlation spectroscopy in quantitative analysis
Present Position: Applications chemist (Bruker Inc., QC, Canada)
- Post-doctorate [n=5]**
- Principal Supervisor Ran Tao (In Progress)
Student Degree Start Date: 2020/4
- 2011/9 - 2012/8
Co-Supervisor Zare, Fatemeh (Completed) , McGill University/CRDA
Student Degree Start Date: 2013/1
Thesis/Project Title: Nutraceutical properties of microwave-treated milk proteins
Present Position: Unknown

2009/5 - 2010/8 Principal Supervisor	Alvarez, Pedro (Completed) , McGill University Student Degree Start Date: 2011/3 Thesis/Project Title: Infrared imaging of bacterial cells Present Position: R&D scientist (Kellogg Co., Battle Creek, Michigan)
2001/1 - 2001/5 Principal Supervisor	Hung, Ming-Ni (Completed) Student Degree Start Date: 2001/1 Student Degree Received Date: 2001/5 Thesis/Project Title: Intein-mediated protein ligation Present Position: Unknown
1999/9 - 2001/3 Principal Supervisor	Wang, Yan (Completed) Student Degree Start Date: 1999/9 Student Degree Received Date: 2001/3 Thesis/Project Title: 2D correlation spectroscopy of proteins Present Position: Applications chemist (Bruker, Inc., MA, USA)

Staff Supervision

Number of Scientific and Technical Staff: 2

Number of Visiting Researchers: 1

Knowledge and Technology Translation

2020/4 - 2022/3	Principal Investigator, R&D Collaboration with Industry Group/Organization/Business Serviced: Acasti Pharma Inc. Target Stakeholder: Industry/Business-Small (<100 employees) Outcome / Deliverable: In a recently funded NSERC Collaborative Research and Development project with Acasti Pharma Inc., my research group is working with the company on the implementation of process analytical technology based on near-infrared spectroscopy (NIR-PAT) in a continuous manufacturing process of a krill oil-derived active pharmaceutical ingredient. Deliverables include validated NIR calibration models that will allow for on-line monitoring of the process at four key points as well as at-line analysis of the product. Evidence of Uptake/Impact: As the partner company in this project lacks expertise in infrared spectroscopy and chemometrics, my research group has a key role in bringing the company's innovative continuous manufacturing process from the bench scale to the pilot scale.
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- 2014/3 - 2018/6 Initiator, Research Uptake Strategies
 Target Stakeholder: Healthcare Personnel
 Outcome / Deliverable: In collaboration with researchers at the McGill University Health Centre and Laboratoire de santé publique du Québec, the potential utility of ATR-FTIR technology for the rapid identification of MRSA and VRE in clinical microbiology laboratories was demonstrated. The results of this work have been presented at both regional and international clinical microbiology meetings. An NSERC I2I (Phase 1) project to further develop this technology has recently been completed.
 Evidence of Uptake/Impact: This work elicited interest from several companies in the in vitro diagnostics market, and research funding was provided by one of them.
 Activity Description: Having conducted research on identification and subtyping of antibiotic-resistant staphylococci by FTIR spectroscopy for over a decade, in 2014 I recognized that with the development of portable ATR-FTIR spectrometers, there was now the opportunity to translate these research findings into practical technology for rapid identification of antibiotic-resistant bacteria in clinical microbiology laboratories. Accordingly, I initiated collaborations with researchers at the McGill University Health Centre and Laboratoire de santé publique du Québec in order to explore this opportunity.
- 2017/5 - 2018/4 Initiator, Research Uptake Strategies
 Group/Organization/Business Serviced: Canadian Food Inspection Agency
 Target Stakeholder: Government Personnel
 Outcome / Deliverable: A proof-of-concept study demonstrating the potential suitability of the ATR-FTIR microbial typing technology developed in our laboratory as a rapid tool for detection of foodborne outbreaks and for routine surveillance of animal feed has been completed. For this study, ATR-FTIR spectra of several hundred isolates of *E. coli* and *Salmonella* were acquired in the laboratory of Dr. Catherine Carillo at the Canadian Food Inspection Agency in Ottawa. Successful discrimination among *E. coli* pathotypes and among seven *Salmonella* serovars was achieved by multivariate analysis of the ATR-FTIR spectral data.
 Evidence of Uptake/Impact: Further development of this technology is being undertaken in a collaborative project between Dr. Carillo and my research group.

Presentations

1. (2018). Infrared Spectroscopic Methods for Detection of Adulterants in Raw Milk. 132nd AOAC Annual Meeting, Toronto, Canada
 Invited?: Yes, Keynote?: No
2. (2017). Whole-Organism Fingerprinting Techniques for Microbial Identification. 3rd International Drug Discovery and Development Forum, Special Interdisciplinary Workshop, Montreal, Canada
 Main Audience: Researcher
 Invited?: Yes, Keynote?: No
3. Kim, H., Lebel, P., Lam, L., Choudhuri, A., Sedman, J., Lévesque, S., Gaudreau, C., and Ismail, A.A. (2016). Rapid and Reagent-Free Identification of Antibiotic-Resistant Nosocomial Bacteria by Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy. ECCMID 2016 - 26th European Congress of Clinical Microbiology, Amsterdam, Netherlands
 Main Audience: Knowledge User
 Invited?: No, Keynote?: No
4. Ismail, A.A. (2016). Potential Applicability of FPA-FTIR Spectroscopy for Rapid Identification of Foodborne Pathogens. 2016 Eastern Analytical Symposium, Somerset, New Jersey, United States
 Main Audience: Knowledge User
 Invited?: Yes, Keynote?: No

5. Ismail, A.A. (2016). Infrared Imaging Spectroscopy as a Rapid Technique for the Identification of Foodborne Pathogens. Annual Symposium of CRIPA - Centre de Recherche en Infectiologie Porcine et Avicole, St-Hyacinthe (Québec), Canada
Main Audience: Knowledge User
Invited?: Yes, Keynote?: No
6. Kim, H., Lebel, P., Lam, L., Choudhuri, A., Langella, M., Sedman, J., Lévesque, S., and Ismail, A.A. (2016). Rapid, Reagent-Free Identification of MRSA and VRE by Attenuated Total Reflectance Fourier Transform Infrared (ATR-FTIR) Spectroscopy. ASM Microbe 2016, Boston, United States
Main Audience: Knowledge User
Invited?: No, Keynote?: No
7. Ismail, A.A. (2015). Whole-Organism Fingerprinting of Pathogenic Bacteria by Stain-Free Infrared Imaging Spectroscopy: New Tool for Bacteria Identification and Subtyping. Continuing education meeting held at the Laboratory of Expertise in Animal Pathology of Quebec (LEPAQ), Quebec City, Canada
Main Audience: Knowledge User
Invited?: Yes, Keynote?: No
8. Kim, H., Kirkwood, J.P., Carranza, L., Ghetler, A., Iugovaz, I., Clark, C., Sedman, J., and Ismail, A.A. (2015). Whole-Organism Fingerprinting of Pathogenic Bacteria by Stain-Free Infrared Imaging Spectroscopy: New Tool for Bacteria Identification and Subtyping. 129th AOAC Annual Meeting & Expo, Los Angeles, United States
Main Audience: Knowledge User
Invited?: No, Keynote?: No, Competitive?: No
9. Kim, H., Sedman, J., Ismail, A.A., and Lebel, P. (2015). Rapid Classifications of Nosocomial Bacteria Using Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy. JAFSA 2015 : Journées annuelles de formation de l'AMMIQ (Association des Médecins Microbiologistes Infectiologues du Québec), Quebec City, Canada
Main Audience: Knowledge User
Invited?: No, Keynote?: No, Competitive?: No
10. Gomaa, A., Nsonzi, F., Sedman, J., and Ismail, A. (2014). An Investigation of the Effects of Microwave Treatment on the Enzymatic Hydrolysis of β -Lactoglobulin and the Nutraceutical Properties of Its Hydrolysates. 17th World Congress of Food Science & Technology (IUFoST 2014), Montreal, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No
11. Nsonzi, F., Martin, D., Sedman, J., Gomaa, A., Pandey, P., and Ismail, A. (2014). Food-Grade Complexes of alpha-Lactalbumin and Oleic Acid with Cytotoxicity Against the Lymphocytic Leukemia (Mouse L1210) Cell Line as Potential Functional Food Ingredients in Nutrition Therapy. 17th World Congress of Food Science & Technology (IUFoST 2014), Montreal, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No
12. Nsonzi, F., Sedman, J., Gomaa, A., Pandey, P., and Ismail, A. (2014). Effect of Preparation Temperature and pH Conditions on the Tertiary Structure of alpha-Lactalbumin in alpha-Lactalbumin-Oleic Acid Samples as Determined Using Biophysical Techniques. 17th World Congress of Food Science & Technology (IUFoST 2014), Montreal, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No
13. Dhawale, N., Adamchuk, V., Prasher, S., Ismail, A.A., and Viscarra Rossel, R.A. (2013). Analysis of the Repeatability of Soil Spectral Data Obtained Using Different Measurement Techniques. Third Global Workshop on Proximal Soil Sensing, Potsdam-Bomim, Germany
Main Audience: Researcher
Invited?: No, Keynote?: No

14. Dhawale, N., Adamchuk, V., Prasher, S., Viscarra Rossel, R.A. Whalen, J.K., and Ismail, A.A. (2013). Predicting Extractable Soil Phosphorus Using Visible/Near-infrared Hyperspectral Soil Reflectance Measurements. 2013 Conference of the Canadian Society for Bioengineering, Saskatoon, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No
15. Gomaa, A., Sedman, J., Ramondetto, G., Ismail, A., and Subirade, M. (2013). Quantification and Distribution of Whey Protein in Cheddar Cheese. 2014 Annual Meeting of the Institute of Food Technologists (IFT), New Orleans, United States
Main Audience: Knowledge User
Invited?: No, Keynote?: No
16. Nsonzi, F., Boye, J., Pandey, P., Sedman, J., and Ismail, A.A. (2012). Scaled-up Production and Biophysical Studies of Complexes of Holo α -Lactalbumin and Oleic Acid Cytotoxic to the L1210 (Lymphocytic Leukemia) Cell Line. 2012 Annual Meeting of the Institute of Food Technologists (IFT), Las Vegas, United States
Main Audience: Knowledge User
Invited?: No, Keynote?: No
17. Farooq, Z., Ismail A.A., Sedman, J., Whalen, J., Cocciardi, R., Pinchuk, D., and Akochi-Koblé, E. (2012). Rapid Determination of Soil Texture and Organic Matter with a Portable Attenuated Total Reflectance Fourier Transform Infrared (ATR-FTIR) Spectrometer. Joint Conference of the Canadian Society of Soil Science and l'Association Québécoise de Spécialistes en Sciences du Sol, Lac Beauport, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No
18. Valtierra-Rodriguez, D., Sedman, J., and Ismail, A.A. (2012). Examination of the Secondary Structure and Thermal Stability of Bovine β -Lactoglobulin A Obtained by Different Isolation Methods. 2012 Annual Meeting of the Institute of Food Technologists (IFT), Las Vegas, United States
Main Audience: Knowledge User
Invited?: No, Keynote?: No
19. Carranza, L., Iugovaz, I. Alvarez, P., Ghetler, A., Sedman, J., Carrillo, C., and Ismail, A.A. (2011). Evaluation of FPA-FTIR Imaging Spectroscopy as a Tool in the Differentiation of *Campylobacter jejuni* from *Campylobacter coli*. Health Canada Science Forum, Vancouver, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No
20. Valtierra-Rodriguez, D., Hancock, M., Grygorczyk, A., Sedman, J., and Ismail, A.A. (2010). L'étude de l'interaction entre les caséinates et la β -lactoglobuline en utilisant la spectroscopie IRTF et la résonance de plasmons de surface. 2010 Meeting of Acfas–Association francophone pour le savoir, Montreal, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No
21. Ismail, A.A. (2010). Development of an Expert System for FTIR Bacteria Identification. 6th International SPEC Conference, Manchester, United Kingdom
Main Audience: Researcher
Invited?: No, Keynote?: No
22. Ismail, A.A. (2010). The McGill IR Group's Experience in Diagnostic Applications of FPA-FTIR Imaging Microscopy: Past, Present and Future Perspectives. Varian Workshop on FT-IR Chemical Imaging at the 6th International SPEC Conference, Manchester, United Kingdom
Main Audience: Knowledge User
Invited?: Yes, Keynote?: Yes

23. Ismail, A.A., Enfield, A., Ghetler, A., and Sedman, J. (2010). Screening of Cervical Cells by FPA-FTIR Spectroscopy: A Study of the Dilution Effect and the Archiving of Smears. 6th International SPEC Conference, Manchester, United Kingdom
Main Audience: Researcher
Invited?: No, Keynote?: No
24. Sedman, J., Haq, M., Prevost Kirkwood, J., and Ismail, A.A. (2010). Application of Infrared Chemical Imaging for the Study of Dynamic Reactions on the Sub-millisecond Timescale through the Use of Microfluidic Devices. Pittcon 2010, Chicago, United States
Main Audience: Researcher
Invited?: No, Keynote?: No
25. Grgorczyk, A., Hancock, M., Sedman, J., and Ismail, A.A. (2009). To Chaperone or Not To Chaperone: Interaction Between Casein and Native β -Lactoglobulin Challenges Casein's Chaperone Status. 8th International Conference on Protein Stabilisation, Graz, Austria
Main Audience: Researcher
Invited?: No, Keynote?: No
26. Ismail, A.A., Haq, M., and Sedman, J. (2009). Evaluation of FTIR Imaging with a Focal Plane Array (FPA) Detector for the Study of Protein Dynamics in a Continuous Flow Mode on a Microsecond Time Scale. Pittcon 2009, Chicago, United States
Main Audience: Researcher
Invited?: No, Keynote?: No
27. Hancock, M., Grgorczyk, A., Sedman, J., and Ismail, A.A. (2009). β -Lactoglobulin–Casein Binding in High-Protein Beverages. Biacore Symposium 2009, Baltimore, United States
Main Audience: Knowledge User
Invited?: No, Keynote?: No
28. Haq, M., Sedman, J., and Ismail, A.A. (2009). Using Microfluidic Systems for Real-Time Investigation of Protein Kinetics by Infrared Imaging. 9th Workshop on Biosensors and Bioanalytical Microtechniques in Environmental and Clinical Analysis, Montreal, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No
29. Gomaa, A., Sedman, J., and Ismail, A.A. (2009). Delineation of the Putative Athermal Effect of Microwave Irradiation on Protein Structure by FTIR Spectroscopy in Conjunction with 2D Correlation Spectroscopy. Pittcon 2009, Chicago, United States
Main Audience: Researcher
Invited?: No, Keynote?: No
30. Iugovaz, I., Ismail, A.A., and Carranza, L. (2008). Optimization of Growth Conditions for the Rapid Identification of Bacteria by Use of Focal Plane Array-Fourier Transform Infrared Imaging Spectroscopy. 2008 Health Canada Science Forum, Ottawa, Canada
Main Audience: Researcher
Invited?: No, Keynote?: Yes

Publications

Journal Articles

1. Lam, L., Dufresne, P., Longtin, J., Sedman, J., and Ismail, A.A. (2018). Reagent-Free Identification of Clinical Yeasts Using Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy. *Journal of Clinical Microbiology*.
Submitted,
Refereed?: Yes

2. Tarhan, I., Ismail, A.A., and Kara, H. (2017). Quantitative Determination of Free Fatty Acids in Extra Virgin Olive Oils by Multivariate Methods and Fourier Transform Infrared Spectroscopy Considering Different Absorption Modes. *International Journal of Food Properties*. 20: S790-S797.
Published,
Refereed?: Yes
3. Gomaa, A.I., Nsonzi, F., Sedman, J., and Ismail, A.A. (2016). Enhanced Unfolding of Bovine beta-Lactoglobulin Structure Using Microwave Treatment: A Multi-spectroscopic Study. *Food Biophysics*. 11(4): 370-379.
Published,
Refereed?: Yes, Open Access?: No
4. Kaur, J., Adamchuk, V.I., Whalen, J.K., and Ismail, A.A. (2015). Development of an NDIR CO₂ Sensor Based System for Assessing Soil Toxicity Using Substrate-Induced Respiration. *Sensors*. 15(3): 4734-4748.
Published,
Refereed?: Yes
5. Dhawale, N., Adamchuk, V., Prasher, S., Viscarra Rossel, R.A., Ismail, A.A., and Kaur, J. (2015). Proximal Soil Sensing of Soil Texture and Organic Matter with a Prototype Portable Mid-Infrared Spectrometer. *Eur. J. Soil Sci.* 66(4): 661-669.
Published,
Refereed?: Yes
6. Nsonzi, F., Gomaa, A., Sedman, J., and Ismail, A.A. (2015). Effect of Temperature on the Structure and Cytotoxicity Effect of β -Lactalbumin-Oleic Acid Complexes against the L1210 Cell Line. *Food Structure*. 6: 1-12.
Published,
Refereed?: Yes
7. Farooq, Z., and Ismail, A.A. (2014). Successful Sugar Identification with ATR-FTIR Spectroscopy. *Agro-Food Industry Hi-Tech*. 25(1): 36-39.
Published,
Refereed?: Yes
8. Gomaa, A. I., Sedman, J., and Ismail, A.A. (2013). An Investigation of the Effect of Microwave Treatment on the Structure and Unfolding Pathways of β -Lactoglobulin Using FTIR Spectroscopy with the Application of Two-Dimensional Correlation Spectroscopy. *Vibrational Spectroscopy*. 65: 101-109.
Published,
Refereed?: Yes
9. Saguer, E. Alvarez, P., Sedman, J., and Ismail, A.A. (2013). Study of the Denaturation/Aggregation Behaviour of Whole Porcine Plasma and Its Protein Fractions during Heating under Acidic pH by Variable-Temperature FTIR Spectroscopy. *Food Hydrocolloids*. 33: 402-414.
Published,
Refereed?: Yes
10. Carranza, L.C., Alvarez, P.A., Ghetler, A., Iugovaz, I., Sedman, J., Carrillo, C.D., and Ismail, A.A. (2012). Evaluation of FPA-FTIR Spectroscopy as a Tool in the Differentiation of *Campylobacter jejuni* from *Campylobacter coli* Isolated from Retail Chicken Samples. *J. Food Safety*. 32(3): 289-295.
Published,
Refereed?: Yes
11. Saguer, E. Alvarez, P., and Ismail, A.A. (2012). Heat-Induced Denaturation/Aggregation of Porcine Plasma and Its Fractions Studied by FTIR Spectroscopy. *Food Hydrocolloids*. 27: 208-219.
Published,
Refereed?: Yes

12. Xianghe, M., Pan, Q., Peilong, S., Ismail, A.A., and van de Voort, F.R. (2012). Impact of Caseinomacropeptide on Heat-Induced Gel Strength of Neutral Whey Protein Concentrates: Model System Study. *Milchwissenschaft–Milk Sci. International*. 67(1): 47-51.
Published,
Refereed?: Yes
13. Amiali, N.M., Golding, G.R., Sedman, J., Simor, A.E., and Ismail A.A. (2011). Rapid Identification of Community-Associated Methicillin-Resistant *Staphylococcus aureus* by Fourier Transform Infrared Spectroscopy. *Diagn. Microbiol. Infect Dis.*70(2): 157-166.
Published,
Refereed?: Yes
14. Mossoba, M.M., Seiler, A., Steinhart, H., Kramer, J.K.G., Rodrigues-Saona, L., Griffith, A.P., Pierceall, R., van de Voort, F.R., Sedman, J., Ismail, A.A., and six others. (2011). Regulatory Infrared Spectroscopic Method for the Rapid Determination of Total Isolated Trans Fat: A Collaborative Study. *J. Am. Oil Chem. Soc.*88(1): 39-46.
Published,
Refereed?: Yes
15. Castro, F., Sedman, J, Ismail, A., Asadishad, B., and Tufenkji, N. (2010). Effect of Dissolved Oxygen on Two Bacterial Pathogens Examined Using ATR-FTIR Spectroscopy, Microelectrophoresis, and Potentiometric Titration. *Environ Sci. Technol.* 44(9): 4136-4141.
Published,
Refereed?: Yes
16. Saguer, E. Alvarez, P., Sedman, J., Ramaswamy, H.S., and Ismail A.A. (2009). Heat-Induced Gel Formation of Plasma Proteins: New Insights by FTIR 2D Correlation Spectroscopy. *Food Hydrocolloids*. 23(3): 874-879.
Published,
Refereed?: Yes
17. Amiali, N.M., Mulvey, M.R., Berger-Baechi, B., Sedman, J., Simor, A.E., and Ismail A.A. (2008). Evaluation of Fourier Transform Infrared Spectroscopy for the Rapid Identification of Glycopeptide-Intermediate *Staphylococcus aureus*. *J. Antimicrob. Chemother.*61(1): 95-102.
Published,
Refereed?: Yes
18. Saguer, E., Fort, N., Alvarez, P.A., Sedman, J., and Ismail, A.A. (2008). Structure-Functionality Relationships of Porcine Plasma Proteins Probed by FTIR Spectroscopy and Texture Analysis. *Food Hydrocolloids*. 22: 459-467.
Published,
Refereed?: Yes, Open Access?: No
19. Alvarez, P.A., Ramaswamy, H.S., and Ismail A.A. (2008). High-Pressure Gelation of Soy Proteins: Effect of Concentration, pH 3 and Additives. *Journal of Food Engineering*. 88(3): 331-340.
Published,
Refereed?: Yes
20. Amiali NM, Mulvey MR, Sedman J, Simor AE, Ismail AA. (2007). Epidemiological Typing of Methicillin-Resistant *Staphylococcus aureus* Strains by Fourier Transform Infrared Spectroscopy. *Journal of Microbiological Methods*. 69: 146-153.
Co-Author
Published,
Refereed?: Yes

21. Cocciardi RA, Ismail AA, Wang Y, Sedman J. (2006). Heterospectral Two-Dimensional Correlation Spectroscopy of Mid-Infrared and Fourier Self-Deconvolved Near-Infrared Spectra of Sugar Solutions. *Journal of Agricultural and Food Chemistry*. 54: 6475-6481.
Co-Author
Published,
Refereed?: Yes

Book Chapters

1. Alvarez, P.A., Ramaswamy, H.S., and Ismail, A.A. (2016). High-Pressure Treatment Effects on Food Proteins of Animal Origin. J. Ahmed, H.S. Ramaswamy, S. Kasapis, and J.I. Boye. *Novel Food Processing: Effects on Rheological and Functional Properties*. : Chapter 14.
Co-Author
Published, CRC Press, United States
Refereed?: No
2. Sedman, J., Ghetler, A., Enfield, A., and Ismail, A.A. (2010). Infrared Imaging: Principles and Practices. E.C.Y. Li-Chan, P.R. Griffiths, and J. Chalmers. *Applications of Vibrational Spectroscopy in Food Science*. (I): 109-131.
Co-Author
Published, Wiley, United States
Refereed?: Yes
3. Ismail AA, Cocciardi RA, Alvarez P, Sedman J. (2006). Infrared and Raman Spectroscopy in Food Science. Hui YH. *Handbook of Food Science, Technology and Engineering*. (1)
Co-Author, Boca Raton, Florida, CRC Press,

Conference Publications

1. Tsutsumi, T., Lam, L., Gravel, A., Frenette, C., Doherty, J.N., Sedman, J., and Ismail, A.A. (2018). Rapid and Reagent-Free Typing of Vancomycin-Resistant *Enterococcus faecium* by Whole-Organism Fingerprinting Techniques: New Tools for Outbreak Investigations. Montréal-Ottawa-Toronto NMR Mini-Symposium (MOOT31), Sherbrooke, Quebec, ,
Conference Date: 2018/10
Poster
Published
Refereed?: No, Invited?: No
2. Tsutsumi, T., Lam, L., Frenette, C., Doherty, J.N., Sedman, J., and Ismail, A.A. (2018). Rapid and Reagent-Free Typing of Vancomycin-Resistant *Enterococcus faecium* by Attenuated Total Reflectance-Fourier Transform Infrared Spectroscopy as a New Tool for Outbreak Investigations. ASM Microbe 2018, Atlanta, United States,
Conference Date: 2018/6
Poster
Published
Refereed?: Yes, Invited?: No
3. Lam, L., Dufresne, P.J., Sedman, J., and Ismail, A.A. (2018). Rapid Identification of Routine Clinical *Candida* Species and Discrimination between Fluconazole-Resistant and Fluconazole-Susceptible *Candida auris* by Reagent-Free Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy. ASM Microbe 2018, Atlanta, United States,
Conference Date: 2018/6
Poster
Published
Refereed?: Yes, Invited?: No

4. Tao, R., and Ismail, A.A. (2018). Antimicrobial Activity of Various Essential Oils and Their Application in Active Packaging of Frozen Vegetables. McGill-CTAQ 2018 Workshop, St-Hyacinthe (Quebec), Canada, Conference Date: 2018/6
Poster
Published
Refereed?: No, Invited?: Yes
5. Cheng, M., and Ismail, A.A. (2018). Antimicrobial Activity of Essential Oils and Their Application in Active Packaging to Inhibit the Growth of Molds on Bread. McGill-CTAQ 2018 Workshop, St-Hyacinthe (Quebec), Canada, Conference Date: 2018/6
Poster
Published
Refereed?: No, Invited?: Yes
6. Vallières, E., Quach, C., Lam, L., Rallu, F., Langella, M., Sedman, J., Raymond M., Sr., Lebel, P., and Ismail, A.A. (2017). Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy for Rapid Identification of Non-Fermenting Gram-Negative Bacilli Isolated from Patients with Cystic Fibrosis. IDWeek 2017, San Diego, United States, Conference Date: 2017/10
Poster
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Refereed?: Yes, Invited?: No
7. Lebel, P., Torres Pina, F., Dufresne, P.J., Levesque, S., Longtin, J., Bahadi, M., Sedman, J., and Ismail, A.A. (2017). Rapid and Reagent-Free Identification of Medically Important Yeasts with the Use of a Portable ATR-FTIR Spectrometer. ASM Microbe 2017, New Orleans, United States, Conference Date: 2017/6
Poster
Published
Refereed?: Yes, Invited?: No
8. Lebel, P., Lam, L., Langella, M., Kim, H., Levesque, S., Iugovaz, I., Sedman, J., and Ismail, A.A. (2017). Rapid, Reagent-Free Bacterial Identification Based on Whole-Organism Fingerprinting by Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy with Subspecies-Level Discriminatory Capability. CACMID - AMMI Canada 2017, Toronto, Canada, Conference Date: 2017/5
Poster
Published
Refereed?: No, Invited?: No
9. Gan, Q., and Ismail, A.A. (2016). FTIR Quantification and Characterization of Bitumen Remediated by a Green Solvent from Alberta Tailing Soils. 66th Canadian Chemical Engineering Conference, Quebec City, Canada, Conference Date: 2016/10
Abstract
Last Author
Published
Refereed?: No, Invited?: No

10. Kim, H., Lebel, P., Lam, L., Choudhuri, A., Langella, M., Sedman, J., Lévesque, S., Ismail, A.A. (2016). Rapid, Reagent-Free Identification of MRSA and VRE by Attenuated Total Reflectance Fourier Transform Infrared (ATR-FTIR) Spectroscopy. ASM Microbe 2016, Boston, United States, Conference Date: 2016/6
Poster
Last Author
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Refereed?: No, Invited?: No
11. Kim, H., Lebel, P., Lam, L., Choudhuri, A., Sedman, J., Lévesque, S., Gaudreau, C., and Ismail, A.A. (2016). Rapid and Reagent-Free Identification of Antibiotic-Resistant Nosocomial Bacteria by Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy. ECCMID 2016 - 26th European Congress of Clinical Microbiology, Amsterdam, Netherlands, Conference Date: 2016/4
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Refereed?: No, Invited?: No
12. Kim, H., Kirkwood, J.P., Carranza, L., Ghetler, A., Iugovaz, I., Clark, C., Sedman, J., and Ismail, A.A. (2015). Whole-Organism Fingerprinting of Pathogenic Bacteria by Stain-Free Infrared Imaging Spectroscopy: New Tool for Bacteria Identification and Subtyping. 129th AOAC Annual Meeting & Expo, Los Angeles, United States, Conference Date: 2015/9
Poster
Last Author
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Refereed?: No, Invited?: No
13. Kim, H., Sedman, J., Ismail, A.A., and Lebel, P. (2015). Rapid Classifications of Nosocomial Bacteria Using Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy. JAFSA 2015 : Journées annuelles de formation de l'AMMIQ (Association des Médecins Microbiologistes Infectiologues du Québec), Quebec City, Canada, Conference Date: 2015/5
Abstract
Co-Author
Published
Refereed?: No, Invited?: No
14. Gomaa, A., Nsonzi, F., Sedman, J., and Ismail, A. (2014). An Investigation of the Effects of Microwave Treatment on the Enzymatic Hydrolysis of β -Lactoglobulin and the Nutraceutical Properties of Its Hydrolysates. 17th World Congress of Food Science & Technology (IUFoST 2014), Montreal, Canada, Conference Date: 2014/8
Poster
Published
Refereed?: No, Invited?: No
15. Nsonzi, F., Sedman, J., Gomaa, A., Pandey, P., and Ismail, A. (2014). Effect of Preparation Temperature and pH Conditions on the Tertiary Structure of β -Lactalbumin in β -Lactalbumin-Oleic Acid Samples As Determined Using Biophysical Techniques. 17th World Congress of Food Science & Technology (IUFoST 2014), Montreal, Canada, Conference Date: 2014/8
Poster
Published
Refereed?: No, Invited?: No

16. Nsonzi, F., Martin, D., Sedman, J., Gomaa, A., Pandey, P., and Ismail, A. (2014). Food-Grade Complexes of β -Lactalbumin and Oleic Acid with Cytotoxicity against the Lymphocytic Leukemia (Mouse L1210) Cell Line As Potential Functional Food Ingredients in Nutrition Therapy. 17th World Congress of Food Science & Technology (IUFoST 2014), Montreal, Canada,
Conference Date: 2014/8
Poster
Published
Refereed?: No, Invited?: No
17. Dhawale, N., Adamchuk, V., Prasher, S., Viscarra Rossel, R.A., Ismail, A.A., Whalen, J.K., and de Louargant, M. (2014). Comparative Analysis of Vis/NIR/MIR Hyperspectrometry for Measuring Soil Physical Properties. 2014 Annual Meeting of the American Society of Agricultural and Biological Engineers, Montreal, Canada,
Conference Date: 2014/7
Paper
Published
Refereed?: No, Invited?: No
18. Gomaa, A., Sedman, J., Ramondetto, G., Ismail, A., and Subirade, M. (2014). Quantification and Distribution of Whey Protein in Cheddar Cheese Using Focal-Plane-Array IR Microscopy. 2014 Annual Meeting of the Institute of Food Technologists (IFT), New Orleans, United States,
Conference Date: 2014/6
Poster
Published
Refereed?: No, Invited?: No
19. Dhawale, N., Adamchuk, V., Prasher, S., Viscarra Rossel, R.A., Whalen, J.K., and Ismail, A.A. (2013). Predicting Extractable Soil Phosphorus Using Visible/Near-Infrared Hyperspectral Soil Reflectance Measurements. Canadian Society for Bioengineering, 2013 Conference, Saskatoon, Canada,
Conference Date: 2013/7
Paper
Published
Refereed?: No, Invited?: No
20. Dhawale, N., Adamchuk, V., Prasher, S., Ismail, A.A., and Viscarra Rossel, R.A. (2013). Analysis of the Repeatability of Soil Spectral Data Obtained Using Different Measurement Techniques. Third Global Workshop on Proximal Soil Sensing, Potsdam-Bomim, Germany (161-165),
Conference Date: 2013/5
Paper
Co-Author
Published
Refereed?: Yes, Invited?: No
21. Herzallah, S., Dhawale, N., Hongye He, Whalen, J., Adamchuk, V., Prasher, S., Rintoul, S., Pinchuk, D., Sedman, J., and Ismail, A.A. (2013). Comparative Assessment of Visible/Near-Infrared and Mid-Infrared Reflectance Techniques for the Rapid Analysis of Soil Texture. Pittcon Conference & Expo 2013, Philadelphia, United States,
Conference Date: 2013/3
Abstract
Published
Refereed?: No, Invited?: No

22. Nsonzi, F., Boye, J., Pandey, P., Sedman, J., and Ismail, A.A. (2012). Scaled-Up Production and Biophysical Studies of Complexes of *holo* γ -Lactalbumin and Oleic Acid, Cytotoxic to the L1210 (Lymphocytic Leukemia) Cell Line. 2012 Annual Meeting of the Institute of Food Technologists (IFT), Las Vegas, United States,
Conference Date: 2012/6
Poster
Published
Refereed?: No, Invited?: No
23. Valtierra-Rodriguez, D., Sedman, J., and Ismail, A.A.,. (2012). Examination of the Secondary Structure and Thermal Stability of Bovine γ -Lactoglobulin A Obtained by Different Isolation Methods. 2012 Annual Meeting of the Institute of Food Technologists (IFT), Las Vegas, United States,
Conference Date: 2012/6
Poster
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Intellectual Property

Patents

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2. Method for the Spectral Identification of Microorganisms. United States. US9551654B2. 2005/06/30.
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3. Method for the Spectral Identification of Microorganisms. Germany. 2004/07/01.
Patent Status: Granted/Issued
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Inventors: A.A. Ismail, J. Kirkwood, J. Sedman, A. Ghetler, and T. Pinchuk