

**1. Name: MARTIN S. A. TANGO**

**2. Academic Qualifications:**

- **Ph.D-2000; Biological Engineering**, Dalhousie University, Halifax Nova Scotia.
- **M.Sc. (Eng.) -1990, Design Engineering**, University of Dar-es-Salaam, Tanzania.
- **B.Sc. (Eng.) -1984, Mechanical Engineering**, University of Dar-es-Salaam, Tanzania.

**Short Courses/Workshops**

- Service Learning, June, 2012; Annual Workshop organized by Nova Scotia Community College, Institute of Technology, St. Xavier University, Mt.Saint Vincent University and Dalhousie University, held in Halifax.
- Attended a three day Canadian e-Learning and Dalhousie's Teaching & Learning Conference, May 3-5, 2012; Dalhousie University, Halifax, NS.
- Service Learning- June 3, 2011; Annual Workshop organized by Nova Scotia Community College, Institute of Technology and St. Xavier University, held in Halifax.
- Training on the role of employment equity in work place, 2011, 2 hours, Acadia University.
- Service Learning – 2010, 2 days workshop, St. Fx University, Antigonish, NS.
- Indoor Air Quality–2008, 2 days workshop, College of Technical Education, Dalhousie.
- Safety Health &Environment–2008, 3 days workshop, Minerva Canada, Mississauga.
- Summer Institute – 2005, 3 days workshop at University of Prince Edward Islands, PEI.

**Awards and Scholarships**

- Post-Doctoral Award. AquaNet. Mitigation of bromate formation during ozonation.
- Canadian Commonwealth and Fellowship Plan (1994-1998).
- Graduate studies award at Faculty of Engineering, Dalhousie University.

**Employment History**

**July 2012 –Todate Associate Professor**

School of Engineering, Acadia University

Teaching undergraduate courses; conduct researches in biorecovery of organic and inorganic compounds from aqueous streams using natural materials, biomass and biofuels, organic nutrients for viticulture, biosurfactants, biocides from marine paints, well water filtrations, biosensors and membrane bioreactors. biocontrol agents for crop production; and contribute to services in University wide activities.

***Courses Taught:*** Strength of Materials, Fundamentals of Environmental Engineering, Thermofluids I (Thermodynamics), Thermofluids II (Fluid Mechanics), and Introduction to Engineering.

**July 2007- June 2012 Assistant Professor**

School of Engineering, Acadia University

Teaching undergraduate courses; conduct researches in biorecovery of organic and inorganic compounds from aqueous streams using natural materials, biomass and biofuels, organic nutrients for viticulture, biosurfactants, biocides from marine paints, well water filtrations, biosensors and membrane bioreactors. biocontrol agents for crop production; and contribute to services in University wide activities.

*Courses Taught:* Strength of Materials, Fundamentals of Environmental Engineering, Thermofluids I (Thermodynamics), Thermofluids II (Fluid Mechanics), Industrial Chemistry, Environmental Science Senior Seminar and Introduction to Engineering.

**Dec 2004 –June 2007 Assistant Professor**

School of Engineering, Acadia University

Teaching undergraduate courses; conduct researches in biorecovery of organic and inorganic compounds from aqueous streams using natural materials, biomass and biofuels, biosurfactants, biocides from marine paints, well water filtrations, biosensors and membrane bioreactors. biocontrol agents for crop production; and contribute to services in University wide activities.

*Courses Taught:* Strength of Materials, Fundamentals of Environmental Engineering, Fluid Mechanics, Thermodynamics and Industrial Chemistry

**July 2002–June 2007 Adjunct Assistant Professor**

Department of Civil Engineering, Dalhousie University

Part-Time Assistant Professor for CIVL 6116: Biological Waste Treatment - Winter 2002/03/04/05. Teaching Assistant for Biological Waste Treatment, Ground Water Modeling, Reservoir Engineering. Assistant Editor, 2001 Special Issues of Journal of Petroleum Science and Engineering Energy Sources Journal

**Jan 2001 –Aug 2003 Research Associate/Post-Doctoral Position**

Department of Civil Engineering, Dalhousie University

Research related to: environmental aspects of oil and gas production, mitigation of bromate formation during ozonation and recirculating aquaculture systems.

Active participation in research projects conducted by graduate students, within the Petroleum Research and Water/Wastewater Research Groups.

**April 2003– Oct 2004 Consulting Services (For BioLogic Environmental Ltd.)**

Evaluation/Monitoring of compost quality for New Era Composting Facility, Halifax, NS. Evaluation of use of produced water from Composting Facility for Sod Growing. De-packaging study for food wastes in Nova Scotia

**Feb – Dec 2000 Research Associate**

Department of Biological /Chemical Engineering, Dalhousie University  
Contract research on the production of organic acids (i.e. Acetic, lactic and propionic acids). Tasks included bioreactor design, scale-up and optimization of the fermentation process.

**Jan 1996 - Jan 2000 Research and Teaching Assistant**

Department of Biological Engineering, Dalhousie University.

Research in the following areas:

- Utilization of food and agricultural wastes for production of value added products (ethanol, lactic acid, biodegradable plastics, etc.)
- Bioreactor design, scale-up and optimization of the fermentation processes
- Fermentation of liquid wastes to various end products.
- Physical and chemical analyses of liquids and solids wastes.
- Use of plants and microbes for contaminant removal (phytoremediation and bioremediation)
- Kinetics modeling of batch and continuous fermentation processes.
- Assisted in teaching/laboratory demonstration:
- Biological waste disposal, Industrial Microbiology, Waste utilization and management.
- Principles of Biochemical Engineering.

**3. Performance as a Teacher****(i) Teaching Activity**

Over the years, I have taught the following courses: APSC 1133-Strength of Materials; APSC 2113-Engineering Thermodynamics; APSC 2123-Fluid Mechanics; APSC 3213-Industrial Chemistry; APSC 3413-Fundamentals of Environmental Engineering and a graduate course CIVL 6116-Biological Waste Treatment at Faculty of Engineering, Dalhousie University. In terms of course delivery; course outlines, course content and course evaluation structure are presented to students and posted on the course resources network at the beginning of the semester. I have used a combination of slides, fully solved sample problems in classrooms, use of models to demonstrate underlying concepts of the subject discussed, use of animated video clips, use of case studies to assess the performance of the process or system. Most of the courses I taught had formal lectures, laboratories, tutorial sessions and industrial field trips. The laboratory experiments were routinely resourced and supervised by Professor Darrell Crooks. However, we do coordinate very closely to ensure smooth logistics in understanding the specific requirements for each laboratory experiment. I was responsible for conducting the tutorial sessions as well as arranging for industrial field trips. On the initiatives for developing of alternate methods on course delivery, as an example, in the strength of materials course, I introduced hands on group work on “fasteners” (that is the use of bolts, rivets, glue, soldering, brazing and seams). This initiative was complemented by inviting a guest lecturer (Professor Christopher Both of School of Music) who lead the hands on sessions and emphasized the application of composites in aircraft manufacturing industry. As an ongoing initiative, I have invited guest speakers to give

lectures on specific topics in a particular course. This approach solidifies and enriches the students' perception on the subject matter as presented by an alternate expert.

In recent years, the safety health and environment is given a high priority in the Chemical Industry and in a society at large, and thus, should be imbedded into the course curriculum taught in engineering programs. I have attended a three day workshop facilitated by Minerva Canada and made use of the resources available in the courses I taught in the past academic years and will continue in the future. Regularly, I have been in close contact with the Student Resource Centre to accommodate the students with special needs. I have consistently supported and catered for the specific needs of the students with disability who registered for the course. In addition, I have also encouraged the students to utilize the resources and support available in the Fountain Learning Commons and Acadia Centre for Social and Business Entrepreneurship (ACSBE).

I am open to options that lead to improvement of my teaching qualities and continue to exploit the techniques that impart the basic concepts of applied science using models or prototypes to demonstrate their functional features and performance. Indeed, this approach of knowledge delivery has been embraced by many of my students and they cherish the experiences they had. Many have acknowledged the benefits of this approach and consider it a milestone in their academic career.

#### **(ii) Teaching Activity Assessment**

The summary of my teaching performance as provided by students course evaluations indicate a quite successful exercise. I will work on addressing the suggestions put forward through acquisition of strategies in knowledge delivery to dynamically changing students' needs and abilities. Overall, the teaching evaluation scores and comments highlight my dedication to share real world problems, provide problem solving skills and motivate/encourage those students willing and keen to succeed. Often, I have used some aspects of the course teaching evaluation as the basis to seek approaches that improve the quality of knowledge delivery. In this regard, I have participated in several workshops organized by the society of teaching and learning at UPEI and also through the Fountain Learning Commons, targeting on methodologies and strategies on quality of knowledge delivery in different classroom settings. Similarly, I have broadened my professional knowledge through workshops in selected key areas of interest such as indoor air quality at Dalhousie University's College of Continuing and Technical Education. Upon completion of this workshop, I received a certificate of participation and also earned a three hour credit towards continued technical education in professional practice as required by Engineers Nova Scotia. As industrial technologies and manufacturing processes continue to become complex, faculty members need to be aware of issues related to product quality guidelines, governing standards and regulations to cope with this trend. Evidently, this entails rigorous research and study of the emerging knowledge in one particular field of competence. I have maintained and kept myself well informed on these issues by regular reading of recent publications in fields of interests including those related to the courses I teach.

#### 4. Scholarly Activity

I have been involved in the development of applied research programs; research into chemical and biological processes and their application to fermentation, aquaculture food processing, water management, oil and gas production and waste utilization; contributed to a number of publications in refereed journals and conferences; prepared technical research reports. Specific examples of applied research contributions that made significant impacts include:

**Viticulture and Enology:** Conducted studies on role of organic nutrients on vine propagation and grape yield. Performed field scale studies in collaboration with small scale/family vineyards. Petite Reviere and VITIS Mobile Winery Services: Funded by IRAP//NRC and NS P&I Voucher Program.

**Water Filtration Studies:** Conducted water purification studies using proprietary filter media for removal of organic and inorganic compounds in ground water; Scallop Shell Solution Pollution (SSPS) Ltd/Acadia University, Feb-May 2009.

**Biomass and Bioenergy:** Evaluate the viability of utilizing food processing wastes (shrimp shells) for the production of biogas using anaerobic digestion and recover valuable biosolids by-products through other bioprocesses (e.g. composting, dewatering and blending). Consulting contract for AMG Inc/HMJ Inc., Funded by IRAP/NRC, Oct-Dec 2007.

**Aquaculture:** Study on mitigation of ozonation by-products and the impact in recirculating aquaculture systems. The results of the study enhanced the safety and production economics of Atlantic Halibut grow-out facilities (Principal Investigator: Dr. G. Gagnon, Funded by AquaNet, in 2002).

**Waste Treatment:** The use of natural (Zeolite) and biomaterials (e.g. fish scale, seashells) for the separation and recovery of metal ions from soil matrix and water/wastewater (aqueous solutions). Alternate adsorption materials were recommended and results gave better knowledge on decontamination of heavy metals, highly toxic and hazardous metals from the water/wastewater and solid waste streams (Principal Investigator: Dr. R. Islam, Funded by NSERC/AIF, in 2001).

**Fermentation:** Production of value added products from dairy industry liquid wastes. Pilot scale fermentation and extraction process for production of organic acids (lactic, acetic and propionic) was developed and commissioned (Principal Investigator: Dr. A. Al-Taweel, Contract Project for Guy Lea Dairy Products, Ontario). Anaerobic digestion of shrimp shells for biogas generation as well as production of soil enrichment compounds (Funded by IRAP/NRC).

#### **Contribution to the Training of Highly Qualified Personnel (HQP)**

Over the years, I have served as mentor, reader or member of a guiding committee for undergraduate and graduate students in their senior projects and theses researches\*. Table 1 shows the summary of my contribution to training of highly qualified personnel (HQP). The tasks included teaching and research in environmental microbiology, bioreactor

design/construction, experimental design, modeling microbial kinetics and analytical methods for water/wastewater treatment. At Faculty of Engineering, Dalhousie University, I have worked as a Research Associate, Post-Doctoral Fellow and as an Adjunct Assistant Professor with Oil & Gas Engineering and Water & Technology research groups.

**Notes:** \* *a mentor*: mainly responsible to advise students on a regular basis during literature review and design/conduct the experiments for their thesis.

*Reader/committee member*: is a formal appointment by the graduate studies office to guide the student during their entire research period as well as examine thesis during the final defence.

Table 1. A summary of training of highly qualified personnel.

	Currently		Over the past six years (excluding the current year)		Total
	Supervised	Co-supervised	Supervised	Co-supervised	
Undergraduate Summer students	1	1	9	2	13
Master's		1		4	5
Doctoral				1	1
Postdoctoral				1	1
Others Co-op Res. Asst		2	2	1	5
<b>Total</b>	<b>1</b>	<b>4</b>	<b>11</b>	<b>9</b>	<b>25</b>

***List of Theses as a Member of Guiding Committee or Reader***

1. External Scholar/Advisory Committee member for MSc student, Mr. Kyle Gallant, Nova Scotia Agricultural College/ Faculty of Science, Dalhousie University; Thesis Title: Vineyard Sustainable Nutrient Management. (Supervisor: Dr. Sharifi Mehdi, Nutrient Management Chair-Agriculture Canada-Agri-Food, Kentville/Nova Scotia Agricultural College, Department of Environmental Sciences, Truro, NS). May 2011-April, 2013... ***In Progress***.
2. Foreign Expert PhD Evaluation, for Mr. Asif Hussain Malik, “Conjugate Heat Transfer Analysis within a Bottom Heated Non-conventional Cylindrical Enclosure”, University of Engineering and Technology, Taxila, Pakistan.
3. Member of a guiding committee for a PhD student, Mr. Arjun Chhetri, at Faculty of - Engineering, Dalhousie University. Thesis title: “Management of sustainable production processes with special emphasis on biofuels”. – ***Completed, August 2012***.
4. Iftikhar Khan, Role of bacterial biopolymer to enhance soil properties in transportation applications –2006 is in progress\* (Co-supervisors: Dr. N. Ali and Dr. M. Tango; ***postponed\****).
5. M. Wassim. Management of petroleum waste oil, M.Eng-Petroleum Engineering, 2006 (Co-Supervisors Dr. L.Liu/U.Venkandarri; ***Completed***).
6. R. Afsamanesh, Use of natural materials for arsenic removal, M.A.Sc-Civil Engineering, 2006 (Supervisor: Dr. R.Islam; ***Completed***).
7. Arif Khan. The future of Oil Sands Production in Alberta. MEng-Petroleum Engineering, 2006 (Supervisor: Dr. Mort Fels, External Reader-Dr. M. Tango; ***Completed***).

***The list of other researches that I have mentored and supported students include:***

1. Jim Ghoshdastidar, Recovery of Pesticides from the environment using membrane bioreactor (MBR), M.Sc. Candidate in Chemistry, 2009-2011 (Supervisor: Dr. Anthony Tong, Chemistry Department, Acadia University).
2. Kayleigh Brown, Treatment of Compost Leachate with membrane bioreactor, BSc, Chemistry 2009-2011. (Supervisor: Dr. Anthony Tong).
3. Patricia Duncan, Filtration of groundwater using natural media, Dal Mechanical Engineering Co-op program, Feb-Aug. 2010.
4. Mariela Nalepa, Toxicity of biocides on marines organisms, Summer Research Assistant, May-August 2009 (Co-supervised with Dr. Richard Karsten, Dept of Math and Statistics, Acadia University).
5. Lydia North, Dispersion of antifouling compounds from marine structures, Summer research assistant. May-August 2008.
6. A.Fereshteh, Comprehensive energy Management, M.A.Sc.- Civil Engineering, 2005 (Supervisor: Dr. R. Islam).
7. Maertens, Marianne Romanie Vera , Impact of humic and colloidal material on UV disinfection efficacy in drinking and process water, M.A.Sc - Civil Engineering , 2005, (Supervisor: Dr. G.Gagnon).
8. N.S. Mahmood, Novel biotechnological approach for the production of chitin and de-icing agents, Ph.D.-Biological Engineering, 2005 (Supervisor: Dr.A.Ghaly).
9. A. Basu, Experimental and numerical studies of novel technique for abatement of toxic metals from aqueous streams, Ph.D.-Chemical Engineering, 2005 (Supervisor: Dr.R.Islam).
10. F.Alkoaik, Fate of plant pathogens and pesticides during composting of greenhouse tomato plant tissues, Ph.D.-Biological Engineering, 2005 (Supervisor: Dr.A.E Ghaly).
11. A.Fereshteh, Comprehensive energy Management, M.A.Sc.- Civil Engineering, 2005 (Supervisor: Dr. R. Islam).
12. M.A. Al-Darbi, The prevention and prediction of corrosion using novel methods, Ph.D- Chemical Engineering, 2004 (Superviosr: Dr.R.Islam).
13. M. P. Chaulk, Pilot-scale evaluation of membrane treatment technologies for surface water NOM removal in the absence of coagulation, M.A.Sc - Civil Engineering, 2004 (Supervisor: Dr. G.Gagnon).
14. H.A. Gjelijaj, The influence of gas pulses on bubble size in dual distributor fluidized bed, M.A.Sc-Biological Engineering, (Supervisor: Dr.A.E.Ghaly).
15. N. O. Saeed, , Prevention of microbially induced corrosion in cement-lined pipelines using natural materials, M.A.Sc - Civil Engineering , 2003, (Supervisor: Dr. R.Islam).
16. Mohammad, Hafizur Rahman, Experimental and numerical modeling studies of arsenic removal with wood ash from aqueous stream, M.A.Sc – Chemical Engineering 2002, (Supervisor: Dr. R.Islam).
17. T.A.Ara, In-depth investigation of archie-equation in carbonate rocks, M.A.Sc, Chemical Engineering, 2002 (Supervisor: Dr. R. Islam).
18. M, Shahedur Rahman, Copper corrosion in distribution system under stagnant flow conditions, M.A.Sc - Civil Engineering 2002, (Co-Supervisors: Dr. G.Gagnon / Dr. R.Islam).
19. Zaman, Mushfiqua, In situ detection of wax and asphaltene precipitation inside an oil pipeline, M.A.Sc - Civil Engineering 2002, (Supervisor: Dr. R.Islam).
20. S. Mustafiz, A novel method for heavy metal removal from aqueous streams M.A.Sc - Civil Engineering, 2002, (Supervisor: Dr. R.Islam).

## Book Published

Martin Tango. 2009. Advanced bioconversion of liquid waste resources into organic acids; published by VDM Verlag, ISBN 13: 9783639208719. Pages 416.

## Articles in refereed Journals

1. Martin S. Tango, Arjun B. Chhetri and Emma Vost. 2011. Understanding the Safety, Health and Environmental (SHE) Challenges of Xenobiotics and Their Remedial Approaches, Journal of Environmental Science and Engineering, 5(8): 992-1002.
2. M. S. Zaman, A.B. Chhetri and M.S. Tango. 2010. Feasibility of hydrogen production from microhydropower projects in Nepal. Retruded 2010 Dhaka, Bangladesh, Dec 2010 (R).
3. **M. S. Zaman, A.B. Chhetri** and M.S. Tango, 2010. Feasibility of hydrogen production from microhydropower projects in Nepal, Submitted for publications to The Intern. Journal on Hydropower & Dams, Surrey, UK.
4. G. R. Pokharel, **A.B. Chhetri** and M.S. Tango, 2009. En route to Strong Sustainability: Valuation of anthropogenic costs of energy sources to human wellness. Submitted to Intern. Energy Journal, Thailand.
5. **Arjun B. Chhetri**, Martin S. Tango, Suzanne M. Budge, K. Chris Watts and M. Rafiqul Islam. Non-Edible Plant Oils as New Sources for Biodiesel Production in special issue on: Biofuels R&D: Securing the Planet Future Energy Needs", Int. J. Mol. Sci. 2008, 9, 169-180 (Start-up Grant, Acadia/NSERC).
6. **Chhetri, A.B., Adhikari, B.H.**, and Tango, M. S. 2008. Solid Waste Management and Application of GIS in Landfill Site Selection in Kathmandu, Nepal, J. of Information, Intelligence and Knowledge, 1(1):xx-xx (AIF/NSERC).
7. J. Biazar, M. Tango, and R. Islam. 2006. Ozone decomposition of the second order in aqueous solutions. Applied Mathematics and Computation 177: 220-225 (AIF/AQUANET).
8. **M. Mortula, M. Khan** and M. Tango. 2006. Review of Iron bacteria in water distribution systems and identification in a simulated cast iron water distribution system. 2005. Journal of South-East Asia American University, 2(1); 13-19, Dhaka, Bangladesh (AIF/KILLAM/NSERC/AWWA).
9. Ghaly, A. E., M. S. A. Tango, **N. S. Mahmoud** and **A. C. Avery**. 2004. Batch propagation of *Lactobacillus helveticus* with microaeration for production of lactic acid from nutrient supplement whey with high lactose concentration. World Journal of Microbiology and Biotechnology, 20(1) 65-75.
10. Tango, M.S. and Gagnon, G.A. 2003. Impact of ozonation on water quality in marine recirculation systems. Aquacultural Engineering, 29: 125-137.
11. J. Biazar, M. Tango, E. Babolian and M.R. Islam, 2003. Solution of the kinetic modeling of lactic acid fermentation using Adomian decomposition method, Applied Mathematics and Computation, vol. 144, 433-439.
12. M.S.A. Tango and A.E. Ghaly. 2003. Continuous lactic acid production using an immobilized packed bed cell system of *Lactobacillus helveticus*. Applied Microbiology and Biotechnology, 58: 712-720.



13. Chaalal, O., Tango M., and Islam, R. 2005. A New Technique of Solar Bioremediation, *Energy, Sources*, 27(4); 361-370.
14. Tango, M.S.A. and Islam, M.R. 2002. Potential of extremophiles for biotechnological and Petroleum Applications. *Energy Sources*, 24(6):543-559.
15. **M.Al-Darbi, Z.M.Muntasser**, M.Tango and M.R.Islam. 2002. Control of microbial corrosion using coatings and natural additives. *Energy Sources*, 24(11): 1009-1018.
16. **N.M.Wasiuddin**, M. Tango and M.R Islam. 2002. A novel method for arsenic removal at low concentrations. *Energy Sources*, 24(11): 1031-1041.
17. Tango, M. and A.E. Ghaly. 1999. Effect of temperature on lactic acid production from cheese whey using *Lactobacillus helveticus* under batch conditions. *Biomass and Bioenergy Journal* 16: 61-78.
18. Tango, M.S.A. and A.E. Ghaly. 1999. Amelioration of lactic acid production from cheese whey using microaeration. *Biomass and Bioenergy Journal*, 17(3): 221-238.
19. Tango, M.S.A. and A.E. Ghaly. 1999. Kinetic modeling of lactic acid production from batch submerged fermentation of cheese whey. *Transactions of the ASAE*, 42(6): 1791-1800.

#### **Other refereed research publications**

1. Mehdi Sharifi, Andrew M. Hammermeister, Kyle Gallant, Keith Fuller and **Martin Tango**. Sustainable wine grape production using soil amendment and cover crops; Technical Paper *to be presented* at American Society of Agriculture (ASA)-Crop Science Society of America (CSSA)-Soil Science Society of America (SSSA) 2013, Nov 3-6, 2013; Tampa Florida.
2. A.E. Ghaly, M.Tango, J. Pyke and **M. Davidson**. 2001. Production of Biodegradable plastic from cheese whey. 11<sup>th</sup> World Congress of Food Science and Technology, Seoul, Korea.
3. A.E. Ghaly, A.M. Al Taweel, H. Gomaa, M.Tango, J. Pyke and **C.Cooney**. 2001. Production of anti-icing/de-icing agents from acid cheese whey. 11<sup>th</sup> World Congress of Food Science and Technology, Seoul, Korea.
4. **J.E. Paez, M.M. Al-Darbi, Z. Muntasser**, M. Tango and M.R. Islam. 2001. Biological Methods for Mitigating Hydrate Problems. 51<sup>st</sup> Canadian Chemical Engineering Conference, Halifax, Nova Scotia, Canada.
5. Tango, M.S.A, **M.M. Al-Darbi, Z.M. Muntasser, J.E. Paez** and M.R. Islam. 2001. Development of Cost Effective Process that Enhances Removal of Arsenic from Surface and Ground Water in Nova Scotia. 51<sup>st</sup> Canadian Chemical Engineering Conference, Halifax, Nova Scotia, Canada.

#### **Non-refereed contributions**

1. **Jim Ghoshdastidar**, Anthony Tong and Martin Tango. Coupling Wastewater Treatment with Renewable Energy Production using Membrane Bioreactor Technology: Awarded \$500, as the best poster in Alternative Energy & Sustainability category: Poster Paper presented at NS Energy Forum, May 16-17, 2012.
2. **Jacob Thompson, Margot Elliot, Jordain Fredericks** and Martin Tango. In pursuit of Sustainable Processes. Presented at Annual Research Summit, Acadia University, March 2011.
3. Martin Tango. Potential of Biocontrol Agents (BCA's) as an Alternative for Pesticides in Agriculture. Technical Presentation at Atlantic Agricultural Research Forum, Dec 7-8, 2010 Delta Fredericton, NB.

4. **Duncan P.**, and M. Tango. Biofuels from biomass resources, Poster Paper presented at NS Energy Forum May 26, 2010.
5. **Thompson, J., Lucas Skulstad, Michael Chou** and Martin Tango. Potential of biofuels from microalgae in NS, Poster Paper presented at NS Energy Forum May 26, 2010.
6. **Jim**, Tong and Tango. Treatment and Management of produced water using membrane bioreactor. Poster Paper presented at NS Energy Forum May 26, 2010; this was one of the THREE WINNING posters, Awarded \$ 500.
7. **Student**, Karsten and Tango. Particles flow tracking in the Bay of Fundy, Poster Paper presented at NS Energy Forum May 26, 2010;
8. **Elsadig Abdallah** and Martin Tango. Strategy for the Management and Removal of Nanoparticles from Drilling Waste, Poster, NS Energy Forum, May 2008, Antigonish, Canada (ACADIA/PRAC/OETR).
9. **Lydia North** and Martin Tango. Dispersion of antifouling biocides from marine energy structures and potential effects on local ecosystems, Poster; NS Energy Forum, May 2008, Antigonish, Canada.(ACADIA/PRAC/OETR).
10. **Elsadig A.M. Abdallah**, Graham Gagnon and Martin Tango. Onsite Chemical Treatment Process for Chromium Based Wastewater, Poster presented at Environmental Research to Commercialization Forum, May 30-31, 2007, St.Mary's University, Halifax, NS (ACADIA/DAL).
11. **Laipeng R.** and Martin Tango. 2006. Proactive management of produced water from coal bed methane (CBM) extraction processes in Atlantic Provinces, Poster Paper presented at Energy Forum-2006, Antigonish, NS, Canada.
12. **Wasim Siddiqui**, Lei Liu, Uday Venkatadri and Martin Tango. 2006. Solutions to Petroleum wastes management system: Case Study of Waste Oil Disposal in Nova Scotia. Poster Paper presented at Energy Forum-2006, Antigonish, NS, Canada.
13. **Laipeng R., APSC 3413X2 Class of 2005** and Tango, M. Striving for Zero Wastes. Integrating classroom teaching and research initiatives. Conference on Global Shifts and Regional Development: Innovating for Sustainable Energy, Agriculture, and Finance. An International Conference of the Greening of Industry Network, Oct. 2005, Wolfville, NS, Canada.
14. **Rouzbeh Afsarmanesh**, Henrietta Mann, Martin Tango, and Rafiqul Islam. 2005. Sustainability of Seashells and Zeolite as Biosorbents for Toxic Inorganic and Gaseous Compounds from Waste Streams. IRM Annual Conference, Halifax, NS.
15. M.S.A. Tango, **K. Baltzer** and G. Gagnon. Evaluation of Ozone for Improving water quality parameters in recirculating aquaculture systems. Poster paper No.78, AquaNet II Conference, Sept. 14-17, 2002, Moncton, NB, Canada.
16. Ghaly, A.E., R. Gordon, **C.S. Cooney**, M. Tango and J.Pyke. 2001. Optimum production of non-soluble polysaccharides for use as a soil plugging agent. 51<sup>st</sup> Canadian Chemical Engineering Conference, Halifax, Nova Scotia, Canada.

### Technical Reports

1. **M. Tango (Engineering)** and Findlay Macrae (ACSBE). Feasibility of Mobile Wine Bottling Plant and Vineyard Study; A Joint Research for VITIS Mobile Winery Services funded by the NS Economic Development's Innovation and Productivity Voucher Program, *Submitted in June 2013.*

2. Improving the Efficiency of Distillation Tank for an Electrolyzer-for Darby Renewable Energy Design Systems, Marion Bridge, SS, Submitted in September, 2012.
3. P & I Voucher Program on wastewater filtration using Aquamedia...Submitted to EcoNova Scotia in August 2010.
4. Evaluation of chlorine removal using Aquamedia; Submitted to NRC/IRAP and SSPS Ltd/Neptune Balance Inc., August 2010.
5. Viability of Aquamedia for well water filtration; Submitted to SSPS Ltd/Neptune Balance Inc., July 2009.
6. Evaluation of Water Filtration Studies using Aqua media-Final Report for Research Service Contract between Acadia University and SSPS Ltd, Digby, NS, Submitted in 2009.
7. Viability for shrimp shells wastes for biogas production-Final Report for Research Service Contract between Acadia University and AMG Inc./HMJ Inc, Halifax, NS., Submitted in 2006.

### **Research Grants Applied**

1. Role of Organic Nutrients Sources for Enhancing Growth of Emerging Vine Cultivars in NS. Proposal for Harrison McCain Scholarship -Emerging Scholar Award; 2 Years, April 2013 to March 2015. *Awarded \$ 15,380.00.*
2. VITIS Mobile Wine Bottling Plant, Co-applied with Findlay Macrae ACSBE, December, 2012...*\$15,000.00 Funded by NS P&I Voucher Program.*
3. Improving the Efficiency of Distillation Tank for an Electrolyzer-for Darby Renewable Energy Design Systems, Marion Bridge, NS, Jan-Mar 2012..*\$ 4,000. Funded by NRC/IRAP.*
4. Understanding the ecological risks of chemicals from wastewater discharges into the Bay of Fundy –submitted in December 2011 to Bay of Fundy Environmental Partnership (BoFEP), (PI - Dr. Tong A. and **Dr. Tango M**), \$ 18,265.... *Not Funded.*
5. Assessment of Biocontrol Agents (BCA's) for sustainable agriculture. Harrison McCain Awards-Emerging Scholars, Acadia University, \$ 15,000. *Not Funded.*
6. Recovery of biogas and bioproducts from winery wastes using two-stage bioreactors, NSERC Discovery Grant..Individual- submitted in Oct 2010....*Not Awarded.*
7. Mehdi Sharifi, Sean Sears, Lise LeBlanc, John Lewis and **Martin Tango**. Sustainable management practices to improve wine grapes yield and quality, 2010/11-2011/12, Technology Development Program, *Funded \$40,000.*
8. Optimization of bench scale microalgae culturing conditions for biofuel production, URF 2010/11 Article 25:55, *Funded \$ 3,500.*
9. Identification of microalgae for biofuel production in Nova Scotia, URF 2009/10 Article 25:55, *Funded \$ 3,500.*
10. Enhancement of biogas production and CO<sub>2</sub> separation during anaerobic digestion of food processing wastes, P & I Voucher Program; Eco Nova Scotia...*Funded (\$ 15,000).*
11. Application of micronutrients and ionic liquid to enhance biofuel recovery from microalgae; NSERC Discovery Grant..Individual- submitted in Oct 2009....*Not Awarded.*
12. Fingerprinting Marine Oil Pollution and Its Environmental Impacts Using Petroleum Biomarkers, Environ. Damages Fund, (PI-Dr. Tong A &Tango M.) *Funded (\$ 40,000).*
13. Treatment and Monitoring of Produced Water using Membrane Bioreactors and Biomarkers: (PI - Dr. Tong A. and Dr. Tango M) ....*Not Funded.*
14. Exploring the spread of Toxic Antifouling Compounds from Tidal Turbines in the Minas Passage, (PI-Dr. R. Karsten and Dr. Tango M.)- *Funded (\$3500).*

15. *Viability of AquaMedia for well water filtration studies using Aqua media, Research Service Contract for SSPS Ltd.. Funded. (\$11,900)*
16. Evaluation of chlorine removal using Aquamedia; submitted to NRC/IRAP and SSPS Ltd/Neptune Balance Inc. *Funded* (\$ 4900).
17. P & I Voucher Program on wastewater filtration using Aquamedia. Submitted to EcoNova Scotia, NS Dept of Environment. *Funded* (\$ 14,500).
18. Evaluation of CO<sub>2</sub> separation from Biogas, BEI Inc. *Funded* (\$ 18,900).
19. Developing a versatile fibre-optic probe to monitor eco-corrosion in offshore energy infrastructure, submitted to PRAC 2008 (PI- Dr. Tong A. and Tango M.)...*Not Granted*.
20. Optimization of photobiological hydrogen production from microalgae, NSERC Discovery Grant – Individual 2008..... *Not Granted*
21. Use of mushroom mycelium for polycyclic aromatic hydrocarbons (PAHs) cleanup from contaminated sites, NSERC Discovery Grant – Individual 2007..... *Not Granted*.
22. Assessment of the potential of the catalytic nanoparticles for sustainable biorefinery production process. NSERC Discovery Grant- Individual 2006 ... ..*Not Granted*.
23. Development of a novel integrated safety and environmental risk management system for carbon dioxide storage and enhanced coal bed methane recovery--. Joint AIF IV Proposal submitted in June 2006-Principal Investigator-Dr. P. Amyotte... *Not Granted*.
24. Viability of biomaterials for the control and mitigation of nosocomial infections in healthcare and institutional facilities-LOI for CIHR-NSERC 2006. .. *Not Granted*.
25. Development and evaluation of a green-wall as a low cost fluoride removal process from domestic grey-water- NSERC Discovery Grant 2005. ... *Not Granted*.
26. Design and development of a biofilter for ammonia control in marine recirculating aquaculture systems - NSERC Discovery Grant 2004. ... *Not Granted*.
27. Enhanced bio-processing and recovery of protein rich agents from mushroom wastes using submerged fermentation (Group with P. Arnold. Acadia Univ.). 2003... *Not Granted*.

### **Other Evidence of Impact and Contributions**

Reviewer for Journal Articles including:

- *Arab Journal of Mathematical Sciences*
- *British Journal of Applied Science & Technology*
- *Fuel Processing Technology.. <http://support.elsevier.com>*
- *International Journal of Green Energy (IJGE)*
- *International Journal of Numerical Methods for Heat and Fluid Flow*
- *Energies Journal (Basel, Switzerland)*
- *Journal of Colloids and Interface Science*
- *International Journal of Environment and Waste Management (IJEWM)*
- *International Journal of Nonlinear Science (IJNS)*
- *Energy and Environment Journal*
- *Iranian Journal of Science and Technology (IJST)*
- *Journal of Numerical Solution for Partial differential Equation (NMPDE)*
- *International Conference on Numerical Analysis and Applied Mathematics, ICNAAM 2008.*
- *Iranian Journal of Optimization*
- *Reviewer, NSERC Strategic Grants on Quality Foods and Novel Bioproducts*

- *Ocean and Coastal Management.*

Post Doctoral Award. AquaNet. Mitigation of bromate formation during ozonation.  
 Guest Speaker; Design of Bioreactors – Seminar of Bioremediation of Contaminants  
 Resource Instructor, Discovery Quest 2005, 2006, 2007 and 2008; Acadia University.

## **5. Service**

### **(i) Service to University and Academic Community**

On regular basis, I have offered to serve as an internal reader; Chair of the Oral thesis defense session for graduate students; Chief Proctor during University Examinations, supported the logistics to accommodate the students with special learning needs; participated during the formulation/feedback process of the current Acadia's Strategic Plan; contributed to the revised Acadia Advantage 2.0; volunteered at information sessions during open houses/recruitment initiatives and Huggins Science Seminars; participated at two Faculty Research Showcases; attended Science Café sessions; supported the WUSC society at Acadia Campus; resourced the sessions during the Annual Discovery Quests for high school students; presented Acadia's scholarships during award nights at high schools; and volunteered during the welcome week for survival and arrival session. On the University campus, I served as a member (1 year sabbatical replacement) of the occupational health and safety committee representing Carnegie Hall. I am presently a member on Academic Integrity and Library Committees for the Faculty of Pure and Applied Science.

### **(ii) Community Service**

#### **Professional Memberships**

Past Corporate Member- Institution of Engineers, Tanzania (1988-2008)

Past Registered Engineer- Engineers Registration Board of Tanzania (1998-2008)

Previous Member - Canadian Society of Agricultural Engineers, American Society of Agricultural Engineers (1996–2000). North Atlantic Biological Engineering Conference, NABEC 1996-2000.

Previous Member: AquaNet, Network of Centres of Excellence in Aquaculture, Canada, (2001-2002).

Full Member, P.Eng – Engineers Nova Scotia (Since March 30, 2009).

#### **Others**

- Regular Volunteer for FLL/RPC Robotics Competition, Acadia University.
- Secretary and Member of the Management Committee, Bay of Fundy Environmental Partnership.
- Member of Steering Committee, Bay of Fundy Environmental Partnership.
- Regular volunteer to annual multicultural festivals in HRM.
- Participated in public forums on water resources/watershed conservation.
- Participate in community meetings on property developments and planning for public recreational facilities.
- Contributed to the reviews and evaluation process of selected public school closures.
- Supported WWF in program that protect natural resources and watersheds
- Supported Oxfarm Canada in educational and developmental initiatives to provide basic services in developing countries.