

SHORT CV

Mattheus (Theo) F. A. Goosen

Office of Research & Graduate Studies
Alfaisal University
College of Science & General Studies building
Maather Road (behind King Faisal Specialist Hospital)
PO Box 50927, Riyadh 11533, Kingdom of Saudi Arabia



Tel: +966 53 294 1468 (cell)
+966 (01) 215 7705 (office)
Email: mgoosen@alfaisal.edu (office); mgoosen31@hotmail.com (home)
Date and Place of Birth: 10/25/1950, Amsterdam, Netherlands
Citizenship: Canadian
Marital Status: Married

Education

	School	Advisor	Degree	Date	Field
Undergraduate	University of Toronto, Canada,	Binckeiwicz	B.A.Sc	1975	Chemical Eng.
Graduate	Univ Toronto, Canada,	M. Sefton	Ph.D	1981	Biomaterials Eng
	Univ Toronto, Canada,	M. Sefton	MASc.	1977	Biomaterials Eng
Postdoctoral	Connaught Lab. Ltd, Toronto,	A. Sun	---	1981	Diabetes
<i>Thesis</i>					
<i>Topic</i>	Thromboresistant Materials: Mechanism of Action of Surface-Bound Heparin				
<i>Director of Thesis Work</i>	M. V. Sefton				

Professional Experience (including current appointment)

School/Company/Organization	Title	Dates
Alfaisal University, Riyadh, Kingdom of Saudi Arabia (2008-present) Office Research & Graduate Studies (<i>Founding Assoc VP</i>) (www.alfaisal.edu)	Assoc Vice President	2008-present
New York Institute Technology (NYIT), Amman, Jordan (2006-2008) (www.nyit.edu.jo)	Campus Dean/CAO	2006-2008
Universidad del Turabo, PR, USA (2004-2006) School of Science & Technology, <i>Int. Ctr Envir. Studies & Sust. Dev.</i> (http://ciemades.suagm.edu)	Prof & Dean Board of Directors	2004-2006 2005-2007
Areej Vegetable Oils & Derivatives SAOG, Oman	Board of Directors	2003-2004
Oman Agricultural Development Company SAOG, Oman	Board of Directors	2002-2004
American-British Academy, Oman	Board of Directors	2001-2003
Sultan Qaboos University, Muscat, Oman (1994-2004) Dept. Mechanical & Industrial Eng, College of Agricultural and Marine Sciences College of Engineering College of Agricultural and Marine Sciences Department of Bioresource & Agricultural Eng	Professor Prof & Dean Prof & Dean Asst Dean Res Grad Head of Dept	2003-2004 2001-2003 1998-2001 1994-1998 1994-1995
Oxford University, Oxford, UK (1990-1991) (sabbatical) Magdalen College, Biomedical Engineering Research Grp	Visiting Professor	1990-1991
Queen's University, Kingston, Ontario, Canada (1984-1996) Clinical Mechanics Group Chemical Engineering & Applied Chemistry Mattheus F. A. Goosen & Assoc, Consultants in Bioengineering Chemical Engineering & Applied Chemistry Chemical Engineering & Applied Chemistry Chemical Engineering & Applied Chemistry	Principal Investigator Professor President Coord. Grad. Studies Associate Professor Assistant Professor	1993-1996 1992-1996 1989-1996 1988-1992 1987-1992 1984-1987
Connaught Laboratories Limited, Toronto, Ontario, Canada (1981-1984) Islet Transplantation Research Group	Assoc. Res. Scientist NSERC Ind Res Fellow	1984 1981-1984

Courses Taught in Last Eight Years

<i>Undergraduate</i>	Introd Chem; Chem & Environment, Instrum & Control Engin (Alfaisal University)
<i>Graduate</i>	Advanced Topics; Adsorption and Ion Exchange (Universidad del Turabo)

November 2016

AWARDS AND SCHOLARSHIPS

2010	-	Nominated for an <i>ENI Award 2011</i> (The Renewable and Non-Conventional Energy Prize)
1994	-	<i>AIChE Paper of the Month</i> (Chem Eng Progress)
1984	-	<i>H. G. MacMorine Publication Prize</i> - Connaught Labs
1982	-	<i>NSERC - IRF</i>
1980	-	Ogilvie Flour Mills - Kenneth Armstrong Memorial Fellowship
1975-1979	-	NSERC Postgraduate Scholarship
1975	-	CSCHE Achievement Award
1974	-	Dow Chemical of Canada Ltd. Award
1973	-	ARDAGH Scholarship
1970	-	Ontario Scholar

RESEARCH AND SCHOLARLY WORK

SUMMARY:

Google Scholar: h-index 48, number of citations: 8,231 (23 Nov 2016)

<https://scholar.google.com/citations?user=-VUqA8AAAAAJ&hl=en>

Scopus: h-index 35, 135 publications, 4463 citations

PAPERS:	REFEREED:	132
	CONFERENCE:	51
BOOKS:	EDITED/AUTHORED	10
	CHAPTERS	35
	REVIEWS	1
PATENTS:	ISSUED:	10
	APPLICATIONS:	7
TECHNICAL REPORTS:		5
ABSTRACTS:		43
INVITED LECTURES:		<u>45</u>
	TOTAL	331
	FUNDING	NO. AMOUNT (\$US)
	GRANTS	39 8,314,640
	CONTRACTS	12 <u>1,885,088</u>
	TOTAL	<u>10,199,728</u>

Publications (listed chronologically)

JOURNAL ARTICLES

- Abdelbaki, C., Benchaib, M.M., Benziada, S., Mahmoudi, H. and Goosen, M., 2016. Management of a water distribution network by coupling GIS and hydraulic modeling: a case study of Chetouane in Algeria. *Applied Water Science*, pp.1-7.
- Elmeddahi, Y., Mahmoudi, H., Issaadi, A. and Goosen, M.F., 2016. Analysis of treated wastewater and feasibility for reuse in irrigation: a case study from Chlef, Algeria. *Desalination and Water Treatment*, 57(12), pp.5222-5231.
- Benhabiles, O., Mahmoudi, H., Lounici, H. and Goosen, M.F., 2016. Effectiveness of a photocatalytic organic membrane for solar degradation of methylene blue pollutant. *Desalination and Water Treatment*, 57(30), pp.14067-14076.
- Goosen, M.F.A., Mahmoudi, H., Ghaffour, N., Bundschuh, J. and Al Yousef, Y., 2016. A critical evaluation of renewable energy technologies for desalination. In: *Application of Materials Science and Environmental Materials (AMSEM2015) Proceedings of The 3rd International Conference* (pp. 233-258).
- Ghaffour, N., Bundschuh, J., Mahmoudi, H. and Goosen, M.F., 2015. Renewable energy-driven desalination technologies: A comprehensive review on challenges and potential applications of integrated systems. *Desalination*, 356, pp.94-114.

- Bundschuh, J., Ghaffour, N., Mahmoudi, H., Goosen, M., Mushtaq, S. and Hoinkis, J., 2015. Low-cost low-enthalpy geothermal heat for freshwater production: Innovative applications using thermal desalination processes. *Renewable and Sustainable Energy Reviews*, 43, pp.196-206.
- Faisal, N., Ahmed, R., Katikaneni, S., Souentie, S., Goosen, M., 2015. Development of plasma sprayed molybdenum carbide-based anode layers with various metal oxide precursors for SOFC. *Journal of Thermal Spray Technology* 28 (8), pp1415-1428..
- Ashraf, M. A., Ahmed, R., Ali, O., Faisal, N. H., El-Sherik, A. M., & Goosen, M. F. A. (2015). Finite Element Modeling of Sliding Wear in a Composite Alloy Using a Free-Mesh. *Journal of Tribology*, 137(3), 031605.
- Ahmed, R., Alib, O., Faisal, NH, Al-Anazi, NM, Al-Mutairi, S, Toma, FL, Berger, LM, Potthoff, A, Goosen, MFA, 2015 Sliding wear investigation of suspension sprayed WC–Co nanocomposite coatings, *Wear* 322–323, pp133–150
- Ahmed, R., Faisal, N. H., Al-Anazi, N. M., Al-Mutairi, S., Toma, F. L., Berger, L. M., Potthoff, A, Polychroniadis, EK, Sall, M, Chaliampalias, D, & Goosen, M. F. A. (2015). Structure Property Relationship of Suspension Thermally Sprayed WC-Co Nanocomposite Coatings. *Journal of Thermal Spray Technology*, 24(3), 357-377.
- Goosen, M.F.A., Mahmoudi, H. & Ghaffour, N. 2014. Today's and future challenges in application of renewable energy technologies for desalination. *Critical Reviews in Environmental Science & Technology*. 44, 929-999.
- Ahmed, R., Ashraf, A., Elameen, M., Faisal, N.H., El-Sherik, A.M., Elakwah, Y.O., Goosen, M.F.A. 2014. Single asperity nanoscratch behaviour of HIPed and cast Stellite 6 alloys. *Wear*, 312 (1-2); 70-82.
- Abdelbaki, C., Touaibia, B., Mahmoudi, H., Djelloul Smir, S.M., Allal, M.A., Goosen, M. 2014. Efficiency and performance of a drinking water supply network for an urban cluster at Tlemcen Algeria. *Desalination & Water Treatment*, 52 (10-12); 2165-2173.
- Elmeddahi Y., Issaadi A., Mahmoudi H., Tahar A.M., Goosen M.F.A. 2013. Effect of climate change on water resources of Algerian Middle Cheliff basin. *Desalination and Water Treatment*, (accepted 6 July 2103)
- Benhabiles, M.S., Abdi, N., Drouiche, N., Lounici, H., Pauss, A., Goosen, M.F.A., Mameri, N. 2013. Protein recovery by ultrafiltration during isolation of chitin from shrimp shells *Parapenaeus longirostris*. *Food Hydrocolloids*. 32 (1); 28-34
- Benhabiles, M.S., Tazdait, D., Abdi, N.,Lounici, H., Drouiche, N., Goosen, M.F.A.,Mameri, N. 2013. Assessment of coating tomato fruit with shrimp shell chitosan and N,O-carboxymethyl chitosan on postharvest preservation. *J Food Measurement & Characterization*. 7(2): 66-74 May (DOI: 10.1007/s11694-013-9140-9)
- Goosen, M.F.A. 2013. Institutional aspects of economic growth: assessing the significance of public debt, economic governance & industrial competition. *The Open Business Journal*, 6; 1-13.
- Benhabiles, M. S., Abdi, N., Drouiche, N., Lounici, H., Pauss, A. Goosen, M. F. A., Mameri, N. 2012. Fish protein hydrolysate production from sardine solid waste by crude pepsin enzymatic hydrolysis in a bioreactor coupled to an ultrafiltration unit. *Materials Science and Engineering: C*, 32 (4); 922-928.
- Benhabiles, M. S., Salah, R., Lounici, H., Drouiche, N., Goosen, M.F.A., Mameri, N. 2012. Antibacterial activity of chitin, chitosan and its oligomers prepared from shrimp shell waste, *Food Hydrocolloids*, 29 (1); 48-56.
- Hacene, B. F., Tahar Abbes, M., Kasbadji Merzouk, N., Loukarfi, L., Mahmoudi, H., and Goosen. M. F. A. 2012. Development of a simulation model for a three dimensional wind velocity field using Tenes Algeria as a case study. *Renew Sustain Energy Rev*, 16(1), 29-36.
- Goosen, M. F. A. 2012 Environmental management and sustainable development. *Procedia Engineering*, 3; 6-13.
- Yahaoui, O., Aizel, L., Lounici, H., Drouiche, N., Goosen, M. F. A., Pauss, A., and Mameri, N. 2011. "Evaluating Removal of Metribuzin Pesticide from Contaminated Groundwater using an Electrochemical Reactor Combined with Ultraviolet Oxidation." *Desalination*, 270, 84-89.
- Dehmas, D. A., Kherba, N., Hacene, F. B., Merzouk, N. K., Merzouk, M., Mahmoudi, H., and Goosen, M. F. A. 2011. "On the Use of Wind Energy to Power Reverse Osmosis Desalination Plant: A Case Study from Tenes (Algeria)." *Renew Sustain Energy Rev*, 15(2), 956-963.
- Drouiche, N., S. Aoudj, H. Lounici, H. Mahmoudi, N. Ghaffour and M.F.A. Goosen, 2011. Development of an empirical model for fluoride removal from photovoltaic wastewater by electrocoagulation process, *Desalination and Water Treatment*, 29 (1-3); 96-102.
- Goosen, M. F. A., Sablani, S., Del-Cin, M., Wilf, M., 2011. "Effect of Cyclic Changes in Temperature and Pressure on Permeation Properties of Composite Polyamide Spiral Wound Reverse Osmosis Membranes", *Sep Sci Techn*, 46 (1), 14-26.

- Alkhamisi, S. A., Abdalrahman, H. A., Ahmed, M., and Goosen, M. F. A. 2011. Assessment of Reclaimed Water Irrigation on Growth, Yield and Water-use Efficiency of Forage Crops, *Applied Water Science*, 1 (1-2); 57-65.
- Goosen M. F. A., Mahmoudi, H. and Ghaffour, N. 2010. Water Desalination using Geothermal Energy. *Energies* 2010, 3, 1423-1442.
- Mahmoudi, H., Spahis, Abdul-Wahab, Sablani, S., and Goosen, M.F.A 2010. Improving the performance of a Seawater Greenhouse desalination system by assessment of simulation models for different condensers, *Renew Sustain Energy Rev*, 14(8), 2182-2188.
- Mahmoudi, H., Spahis, N., Goosen, M.F.A., Ghaffour, N., Drouiche N., and Ouagued, A., 2010. Applic of geothermal energy for heating & fresh water production in a brackish water greenhouse desalination unit: A case study from Algeria, *Renew Sustain Energy Rev*, Vol. 14 (1), 512-517.
- Al-Obeidani, S., Al-Hinai, H., Goosen, M.F.A., Sablani, S., Taniguchi, Y., and Okamura, H., 2008, "Chemical Cleaning of Oil Contaminated Polyethylene Hollow Fiber Microfiltration Membranes" *J. Membrane Science*, 307, 299-308.
- Mahmoudi, H., Abdul-Wahab, S.A., Goosen, M.F.A., Sablani, S., Perret, J., Ouagued, A., and Spahis, N., 2008. "Weather Data and Analysis of Hybrid Photovoltaic-Wind Power Generation Systems Adapted to a Seawater Greenhouse Desalination Unit Designed for Arid Coastal Regions". *Desalination*. 222, 119-127.
- Goosen, M. F. A., Sablani, S., Al-Hinai, H., Al-Obeidani, S., Al-Belushi, R., and Jackson, D., 2004, "Fouling of Reverse Osmosis and Ultrafiltration Membranes: A Critical Review", *Separation Science and Technology*, Vol. 39, 1-37.
- Ahmed, M., Arakel, A., Hoey, D., Thumarukudy, M. R., Goosen, M. F. A., Al-Haddabi, M., and Al-Belushi, A. 2003, "Feasibility of Salt Production from Inland RO Desalination Plant Reject Brine: A Case Study", *Desalination*, 158, 109-117.
- Goosen, M. F. A., Sablani, S., Al-Maskri, S. S. and Al-Belushi, R. H., 2002. "Effect of Temperature & Feed Flow Rate on Concentrat Polarization in Reverse Osmosis of Seawater", *Desalination*, 144, 367-372.
- Li, Q., Goosen, M. F. A., Grandmaison, E. W., and Taylor, D., 2000. "Convection-Enhanced Mass Transfer in Aggregated Beads for Gel Chrom.", *AIChE Journal*, 46(10), 1927-1936.

An additional 94 other refereed journal papers

BOOKS

- Mahmoudi, H, Ghaffour, N., Goosen, M.F.A. and Bundschuh, J (Eds), 2017. "*Renewable Energy Technologies for Water Desalination*", CRC Press (Taylor Frances Group) (Balkema NDL), 15 Chapters (in press)
- Gottinger, H., and Goosen, M. F. A, (Eds), 2012. "*Strategies of Economic Growth and Catch-up: Industrial Policies and Management*", Nova Science Publ Inc, Hauppauge, NY (10 Chapters) (ISBN: 978-1-61209-022-1)
- Laboy, E., Goosen, M.F.A. & Emmanuel, E. (Eds), 2010 "*Environmental and Human Health: Risk Management in Developing Countries*". CRC Press (Taylor & Frances Group) (Balkema NDL) London. 276 pp, ISBN:978-0-415-60162-7
- Laboy, E., Schaffner,F., Abdelhadi, A., & Goosen, M.F.A. (Eds), 2009, "*Environmental Management, Sustainable Development & Human Health*" Taylor & Frances (Balkema NDL) London. 35 Chapt, 594 pp ISBN: 978-0-415-46963-0
- Al-Rawas, A.A. and Goosen, M.F.A. (2006). "*Expansive Soils: Recent Advances in Characterization and Treatment*", Taylor and Frances (Balkema NDL) London. 34 Chapt, 535 pp ISBN 0-415-39681-6.
- Goosen, M. F. A., Shayya, W. H. (Eds.), 2000. "*Water Management, Purification and Conservation in Arid Climates: Volume 3, Water Conservation*", Technomic Publishing Co., Inc., Lancaster, Pennsylvania, 336 pp, ISBN No. 1-56676-771-7.
- Goosen, M. F. A., Shayya, W. H. (Eds.), 2000. "*Water Management, Purification and Conservation in Arid Climates: Volume 2, Water Purification*", Technomic Publishing Co., Inc., Lancaster, Pennsylvania, 358 pp, ISBN No. 1-56676-770-9.
- Goosen, M. F. A., Shayya, W. H. (Eds.), 1999. "Water Management, Purification and Conservation in Arid Climates: Volume 1, Water Management", Technomic Publishing Co., Inc., Lancaster, Pennsylvania, 372 pp, ISBN No. 1-56676-759-8.
- Goosen, M. F. A., (ed.) 1997. "Applications of Chitin and Chitosan". Technomic Publ. Co., Inc., Lancaster, Pennsylvania. 336 pp, ISBN 1-56676-449-1.
- Goosen, M. F. A., (ed.), 1993, "Fundamentals of Animal Cell Encapsulation and Immobilization". CRC Press, Boca Raton, Florida, 326 pp., ISBN: 0-8493-5944-9.
- Goosen, M. F. A., Daugulis, A. J. and Faulkner, P. (eds.), 1993, "Insect Cell Culture Engineering". Bioprocess Technology Series, 17, 250 pp., ISBN:0-8247-8944-X.

PATENTS

- Hommel, M., Sun, A. M. and Goosen, M. F. A., *Droplet Generation*.
Assignee: Connaught Labs. Ltd. U.S. 4,956,128 11 Sep. 1990
- Hommel, M., Sun, A. M., and Goosen, M. F. A., *Production of Small Droplets Including New Injectable Microcapsules Containing Living Tissue or Cells*.
Assignee: Connaught Labs. Ltd. CA 1240815 23 August 1988
CA 1241598 06 September 1988
DE 3484067 07 March 1991
- Goosen, M. F. A., O'Shea, G. M. and Sun, A. M., *Microencapsulation of Living Cells and Tissue for Implantation in Body*.
Assignee: Connaught Labs. Ltd. CA 1215922 30 December 1986
U.S. 4789550 06 December 1988
U.S. 4956128 11 September 1990
- Goosen, M. F. A., King, G. A., Daugulis, A. J. and Faulkner, P., *Multiple Membrane Biocompatible Microcapsules*.
Assignee: Queen's University U.S. 4942129 17 July 1990
- Goosen, M. F. A., O'Shea, G. M. and Sun, M. F., *Microencapsulated Tissue or Cells for Implantation*.
Assignee: Connaught Labs. Ltd. U.S. 4806355 21 February 1989
- Goosen, M. F. A., O'Shea, G. M. and Sun, A. M., *Biocompatible Microcapsules with Macromolecular Core Surrounded by Semipermeable Membrane for Prolonged Release*.
Assignee: Connaught Labs. Ltd. CA 1196862 19 November 1985
U.S. 4673566 16 June 1987
DE 3380788 07 December 1989
- Goosen, M. F. A., O'Shea, G. M. and Sun, A. M., *Encapsulation of Living Tissue or Cells*.
Assignee: Connaught Labs. Ltd. U.S. 4689293 25 August 1987
- Goosen, M. F. A., and Sun, A. M., *Biodegradable Insulin Composition for Injection or Implantation*.
Assignee: Connaught Labs. Ltd. EP 134318 20 March 1985
CA 1196864 19 November 1985
- Goosen, M. F. A., and Sun, A. M., *Slow Release Injectable Insulin Composition*.
Assignee: Connaught Labs. Ltd. U.S. 4492684 08 January 1985
CA 1196863 19 November 1985
- Goosen, M. F. A., O'Shea, G. M. and Sun, A. M., *Microencapsulated Living Tissue and Cells*.
Assignee: Connaught Labs. Ltd. U.S. 4487758 11 December 1984

Plus seven patent applications.

Research Interests:

Renewable energy, sustainable development, environmental management, economic growth and institutions, microencapsulation, controlled drug delivery technology, biomaterials, cell culture engineering, water purification, production water and grey water reuse, solar desalination humidification-dehumidification, membrane separations, membrane fouling and concentration polarization, reverse osmosis and ultra-filtration,

Current projects:

- **Saudi Aramco Contracts: R. Ahmed**, (PI) N Faisal, Azeem Ashraf, M. Goosen. "Thermal Spray Coatings for Wear Resistant Applications", 1,600,000 SR (2YRS) (400,000 USD) 2012-2014.
- **KACST Sci & Techn Strategic Program: E. Alsharaeh (PI)**, and M. Goosen. "Synthesis and characterization of polymer nanocomposites via gas phase polymerization", 1,690,000 SR (2YRS) (450,000 USD), funded 2014.

Teaching

- *Introduction to Chemistry 1 and 2* (PCHE101;PCHE12) (Alfaisal University 2013, 2014)
- *Chemistry & Environment CHM 107* (AU 2014)
- *Instrumentation and Control Engineering* (ME 306) (Alfaisal University 2011)
- Biomedical Engineering (SQU Oman and Queen's University, Canada)

30 years teaching experience in Canada, USA, Oman and Saudi Arabia