ALISON LEWIS

Dean, Faculty of Engineering and the Built Environment, University of Cape Town
Chemical Engineer

CONTACT DETAILS

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DESCRIPTION

I am currently the Dean of the Faculty of Engineering and the Built Environment at the University of Cape Town and a member of the Senior Leadership Team at the University.

SKILLS AND EXPERIENCE

June 2015 – present: Dean, Faculty of Engineering and the Built Environment, University of Cape Town

- *Contributing to strategic leadership in a complex and challenging environment;*
- *Developing and implementing the strategic vision for the faculty;*
- *Leading and developing the faculty of 4500 students and 450 staff in line with an innovative, progressive and strategic vision;*
- *Assuring the continuing provision of high-quality education at both undergraduate and postgraduate levels,*
- *Developing the faculty research profile*
- *Ensuring sound financial management, including planning and budgeting for the faculty;*
- *Leading transformation in the faculty, and in the University generally, by implementing measures to enhance diversity in the institutional culture, including the race and gender representivity of students and staff in the faculty;*
- *Forging and sustaining constructive links with the professions represented in the faculty.*

Jan 2013 – May 2015: Head of Department, Chemical Engineering, University of Cape Town

- *Strategic planning, vision development and co-ordination; budgeting and financial planning; line management, performance review, staff development and coaching for academic, technical and administrative staff; implementation of transformation initiatives such as the creation of new departmental posts; facilitating projects such as the new curriculum project, the laptop project and Assistant Lecturer development programme;*

Jan 1999 – present: Director, Crystallisation and Precipitation Research Unit, UCT http://www.crystal.uct.ac.za/

- *Founded and developed the Crystallisation and Precipitation Research Unit; raised/co-raised R52m in funding since 2001, supervised/co-supervised 37 MSc and PhD students; created 4 academic, administrative and technical posts; published 60 journal papers, 69 international conference presentations, 1 patent, 12 books/book chapters and 1 textbook: "Industrial Crystallization: Fundamentals and Applications" (Cambridge University Press, August 2015)*

Jan 1988 – Dec 1989: Process Engineer, South African Nylon Spinners

- *Design and commissioning*

1981 –1987 & 1990-1993: BSc (ChemEng), MSc (Eng) and PhD Student, UCT

- *Upfront Editor, Cape Democrats, United Democratic Front, 1988 -1990; Education Officer, UCT Students Representative Council, 1984/85; Flashover Editor, Engineering Students Council, 1983/84*

QUALIFICATIONS AND EMPLOYMENT RECORD

June 2015 – present:	Dean, Faculty of Engineering and the Built Environment, University of Cape Town
Jan 2013 – May 2015:	Head of Department, Chemical Engineering Department, UCT

2010–2014 & 2019-2020:	University Orator, “to prepare and deliver citations for the conferment of honorary degrees or any citations at the invitation of the Vice-Chancellor”, UCT
Jan 2007 – present:	Professor, Chemical Engineering Department, UCT
Jan 2002 –Dec 2006:	Associate Professor, Chemical Engineering Department, UCT
Jul 1995 – Dec 2001:	Senior Lecturer, Chemical Engineering Department, UCT
Jan 1994 - Jul 1995:	Post-Doc Fellow, Water Research Group, Civil Engineering Department (UCT)
1990-1993:	PhD Civil Engineering (UCT)
1988-1989:	Process Engineer, South African Nylon Spinners
1986-1987:	MSc Chemical Engineering (UCT)
1981-1985:	BSc Chemical Engineering (UCT)

STUDY AND RESEARCH APPOINTMENTS

1-31 Dec 2016:	Visiting Professor, Group for Molecular Engineering of Functional Materials (GMF), Institute of Chemical Science and Engineering, Swiss Federal Institute of Technology (EPFL), Sion, Valais, Switzerland
Jan – May 2009:	Visiting Professor, University of Mauritius
Jan – Dec 2003:	Visiting Research Associate, Department of Chemical and Process Engineering, Sheffield University, United Kingdom

PROFESSIONAL/ACADEMIC

Fellow of the Institute of Chemical Engineers (FIChemE); 2014
Fellow of the South African Institute of Chemical Engineers (FSAIChE); 2012
Fellow of the South African Academy of Engineering (FSAAE); 2011
Member of the Executive Committee of the South African Academy of Engineering (SAAE) for the term 2020 to 2022.
Fellow of the South African Institute of Mining and Metallurgy (FSAIMM); 2013
Fellow of the University of Cape Town College of Fellows; 2012
Member of the Academy of Science of South Africa (ASSAF); 2010
Registered Professional Engineer, Engineering Council of South Africa (PrEng), 1990;

HONOURS AND AWARDS

2019

- *National Science and Technology Forum (NSTF) Engineering Research Capacity Development Award http://www.nstf.org.za/wp-content/uploads/2019/07/2019-06-28-NSTF-South32-Awards.pdf*
- *'For training, nurturing and mentoring students in the Crystallization and Precipitation Research Unit at UCT through new research into the recovery of valuable metals, water and minerals through innovative methods'*

2016

- *Africa Water Leadership Award: conferred on "outstanding professionals who have the vision, flair, acumen and professionalism to demonstrate excellent Leadership and Management skills in an organisation, making changes and achieving results”.*

2015

- *Distinguished Woman Scientist Award, Department of Science and Technology, South African Women in Science Awards for Research and Innovation; https://www.youtube.com/watch?v=2lMJc64x97s*

- *Renewal of B2 Rating, National Research Foundation (B2 = Researchers who enjoy considerable international recognition by their peers for the high quality and impact of their recent research outputs)*
- *WRC Knowledge Tree Award for research excellence in the category of New Products and Services for Economic Development.*
- *Second most cited article in Hydrometallurgy: Lewis, A.E. 2010. A review of metal sulphide precipitation, Hydrometallurgy, 104 (2) 222-234*

2014

- *University Orator appointment extended for a second five-year term (resigned in June 2015 on being appointed as Dean)*

2012

- *Distinguished Woman in Physical and Engineering Science award, Department of Science and Technology, South African Women in Science Awards "for an outstanding contribution to building South Africa's scientific and research knowledge base"*

2010

- *NRF President's "Champion of Research Capacity Development at South African Higher Education Institutions" Award, https://mg.co.za/article/2016-08-15-00-professor-alison-emslie-lewis-a-novel-technology-for-mine-water-and-brine-treatment*

2009

- *B2 Rating, National Research Foundation, "Researchers who enjoy considerable international recognition by their peers for the high quality and impact of their recent research outputs"*
- *Best paper award, Australasian Institute of Mining and Metallurgy's Water in Mining Conference, Perth, "Worth its salt – how Eutectic Freeze Crystallization can be used to recover water and salt from hypersaline mine waters"*

2004, 2005 and 2006

- *Finalist for Research Capacity Development, NSTF Awards*

2003

- *OLI Systems Ltd, recipient of the crystallisation research grant for United States Department of Energy (DOE) crystallisation project, Rated as*
- *"Internationally leading" in research quality, research planning and practice, potential scientific impact and*
- *"Outstanding" for output of research staff, communication of research outputs, potential benefits to society and cost-effectiveness by external reviewers for the personal contribution to the US DOE project on crystallisation*
- *Research Fellowship, United Kingdom Engineering and Physical Sciences Research Council (EPSRC)*

1999, 2000 and 2001

- *UCT's Distinguished Teacher's Award, shortlisted*

1998, 1999 and 2000

- *UCT Merit Award*

EXTERNAL DEANSHIP PRESENTATIONS

1. *Lewis, A.E., 2020.* ***Reimagining Learning for Higher Education****, World Economic Forum Interaction Lab no. 1, Thursday, 16 July 2020*
2. *Lewis, A.E., 2020.* ***Leaders, Followers or Spectators: African Research Universities and the Future****, Africa Oxford Initiative (AfOx Insaka), online 2 July 2020*

3. *Lewis, A.E., 2019.* ***Leaders, Followers or Spectators: African Research Universities and 4IR****, Africa Research Universities Alliance (ARUA) Second Biennial Conference. Africa and the Fourth Industrial Revolution: Defining a Role for Research Universities. University of Nairobi: 18-20 November*
4. *Lewis, A.E., 2019.* ***Panel 1: The Future of Work****. 10th international Reinventing Higher Education working conference****,*** *Brown University, Providence, Rhode Island. 4-5 April*
5. *Lewis, A.E., 2018.* ***Bridging the gap between Academia, Industry, and Government.*** *Keynote talk. CESA Infrastructure Indaba 2018: Engineering the Future Now! Southern Sun, OR Tambo. 6 March. http://cesa.co.za/indaba/speakers.php*
6. *Lewis, A.E., 2018.* ***From Crisis to Leader,*** *Panellist at the #Co-Create Design Festival Conference, #BeyondTheCrisis, East City, Cape Town. 22-24 February 2018, http://cocreatesa.nl/cocreatedesign-festival-speakers/*
7. *Andrews, P. and Lewis, A.E., 2017.* ***Transformation and Decolonisation at the University of Cape Town and Why its Urgency? Perspectives from the EBE and Law Faculties****. Alumni presentation: New York City, 13 April*
8. *Andrews, P. and Lewis, A.E., 2016. Institutional Panel:* ***Key Challenges and opportunities at UCT in the context of higher education change****. New Academic Practitioners Programme, Residential workshop: Mont Fleur Conference Centre, 8-10 June*
9. *Lewis, A.E., 2015. "****Curriculum development and design for student success and transformation in the Faculty of Engineering and the Built Environment at the University of Cape Town****" GEDC/AEDC SUMMIT on Education, Addis Ababa, Ethiopia, September 17 – 18*

SELECTED KEYNOTE ADDRESSES/PLENARY LECTURES/ INVITED CONTRIBUTIONS

1. *Lewis, A.E., 2020,* ***Treatment of brines from power generation using freeze-based crystallization methods****, ISIC (International Symposium on Industrial Crystallization), Webinar series, September 9 - 11, 2020*
2. *Lewis, A.E., 2020,* ***New thinking for Crystallization and Precipitation in Extractive Metallurgy,*** *TMS (The Minerals, Metals & Materials Society), Extraction and Processing Division, Symposium on Rare Metal Extraction and Processing, 150th TMS annual meeting, Orlando, March 14-18, 2021*
3. *Lewis, A.E., 2019****. South African Brines: Characterisation and Treatment****, presentation as the official South African Representative, Workshop on Salts and Chemicals Extraction from Saline Waters For Indian Ocean Rim (IORA) Countries, October 15-17, 2019, Tehran, Islamic Republic of Iran*
4. *Lewis, A.E., 2017.* ***Crystallization and precipitation in extractive metallurgy.*** *COM 2017: Conference of Metallurgists, 27 – 30 August 2017, Hyatt Regency Vancouver, Vancouver, BC, Canada*
5. *Lewis, A.E., 2017.* ***Eutectic Freeze Crystallization****. Water Institute of Southern Africa: Advanced Technical Workshop on Water Treatment, Aurecon, 10 March.*
6. *Lewis, A.E., 2015.* ***"Rethinking Precipitation Processes: The Art of the State,*** *"Distinguished Lecturer Series: Lectures at the Leading Edge, University of Toronto, February 2015. http://www.chem-eng.utoronto.ca/news/Lectures_at_the_Leading_Edge___Emerging_Leaders_Lecture_Series.htm*
7. *Lewis, A.E., 2014.* ***Turning toxins into treasure, recovery of metals from wastewater using crystallization,*** *IMETE – International Master of Science in Environmental Technology and Engineering, Ghent University, Belgium, 8-12 September 2014, http://www.imetesummer.ugent.be/programme.htm*
8. *Lewis, A.E., 2014.* ***Is it art? Or is it science? From Alchemy to Hydrometallurgy: Industrial Crystallization Research at the University of Cape Town****, Max Planck Institute of Complex*

Technical Systems, Magdeburg, Germany, 21-23 May 2014, http://www.mpi-magdeburg.mpg.de/2337249/past_colloquia

9. *Lewis, A.E., 2014.* ***Making value out of waste: why Eutectic Freeze Crystallization is a hot topic right now****, ACQUEAU – Water Beyond; Europe Workshop, Brussels, Belgium, 20-21 February, 2014, http://www.eurekanetwork.org/showevent?p_r_p_564233524_articleId=3559136&p_r_p_564233524_groupId=10137*
10. *Lewis, A.E., 2014.* ***Rethinking water and waste - The State of the Art of Eutectic Freeze Crystallisation****. 11th International Water Association (IWA) Leading-Edge Technology conference, Abu Dhabi, United Arab Emirates, 26-30 May 2014,* ***Keynote address***
11. *Lewis, A.E., Randall, D.G., Reddy, S.T., Jivanji, R. and Nathoo, J., 2009.* ***Worth its salt – how Eutectic Freeze Crystallization can be used to recover salt from hypersaline mine waters****, Water in Mining, AusIMM, Perth Australia, September, 2009, Keynote address, https://www.ausimm.com.au/publications/publication.aspx?ID=5387*

SELECTED POPULAR CONTRIBUTIONS

12. *Lewis, A.E., 2018.* ***Talk and demonstration*** *to Silverlea Primary, Athlone. 23 May*
13. *Lewis, A.E., 2014.* ***Modern Alchemy: Turning toxins into treasure,*** *Café Scientifique, Irma Stern Museum, Rosebank, Cape Town, 3 June, http://www.youtube.com/watch?v=aDPPwJxjUL4*
14. *Lewis, A.E., 2014.* ***Modern Alchemy,*** *BBC World Service - The Forum, Radio program, London, England, Radio broadcast , 15 January 2014http://www.bbc.co.uk/iplayer/episode/p01q5cg6/The_Forum_Modern_Alchemy/*
15. *Lewis, A.E., 2012.* ***Change the world and study Chemical Engineering****, Lappeenranta University of Technology, Video recording, http://www.youtube.com/watch?v=G-qQo8_6Drg*
16. *Lewis, A.E., 2011.* ***Be bold and mighty forces will come to your aid****, TEDX, Cape Town, Ratanga Junction, Canal Walk, Western Cape, 17 April. http://www.youtube.com/watch?v=lWsqSRos1LY*

PUBLICATIONS

Articles in international, accredited, peer -reviewed journals

1. *Aspeling, B., Chivavava, J., and Lewis, A.E. 2020.* ***Selective salt crystallization from a seeded ternary eutectic system in Eutectic Freeze Crystallization,*** *Separation and Purification Technology, (in press) (Impact factor 5.107)*
2. *Harding, G., Chivavava, J., and Lewis, A.E. 2020.* ***South African industrial effluents and their characterisation,*** *WaterSA, (in press) (Impact factor 1.09)*
3. *Leyland, D. Chivavava, J., and Lewis, A.E. 2019.* ***Investigations into ice scaling during eutectic freeze crystallization of brine streams at low scraper speeds and high supersaturation****, Separation and Purification Technology, 2019; 220:33-41. (Impact factor 3.927)*
4. *Mangunda, C., Petersen, J. and Lewis, A. 2018.* ***The Effect of Fe(III) Concentration on the Dewatering Behaviour of Fe(III) Oxyhydroxide Precipitates from Low-tenor Solution****s, Hydrometallurgy , 183, 20-28. (Impact factor 2.85)*
5. *Hubbe, M. A., Becheleni, E. M. A., Lewis, A. E., Peters, E. M., Gan, W., Nong, G., Mandal, S., and Shi, S. Q. 2018.* ***Recovery of inorganic compounds from spent alkaline pulping liquor by eutectic freeze crystallization and supporting unit operations: A Review****, BioRes. 13(4), 9180-9219. (Impact factor 1.32)*
6. *Becheleni, E., Rodriguez-Pascual, Ml, Lewis, A.E. and S.D. Rocha, 2017.* ***Influence of Phenol on the Crystallization Kinetics and Quality of Ice and Sodium Sulfate Decahydrate during Eutectic***

***Freeze Crystallization**, Industrial and Engineering Chemistry Research, 56 (41), 11926–11935. (Impact factor 2.0843)*

7. *Maharaj, C., Chivavava, J., and Lewis, A.E. 2017. **Treatment of a highly concentrated multicomponent mining effluent using calcium hydroxide in a fluidized bed crystallize**r, Journal of Environmental Management, 207, 378-386. (Impact factor 2.197)*
8. *Lewis, A.E., Zhang, Y., Gao, P., and Nazeeruddin, M.K., 2017. **Unveil the Grain Growth of Perovskite Films from One-Step and Two-Step Deposition Methods: Implications for Photovoltaic Applicatio**n, ACS Applied Materials & Interfaces, 2017 9 (30), 25063-25066. (Impact factor 7.504)*
9. *Hasan, M., Filimonov, R., Chivavava, J., Sorvari, J., Louhi-Kultananen, M. and Lewis, A.E. 2017. **Ice growth on cooling surface of a jacketed and stirred Eutectic Freeze Crystallizer from aqueous Na_2SO_4 solution,** Separation and Purification Technology, **175**: 512-526. (Impact factor 3.359)*
10. *Peters E., Chivavava, J., Rodriquez Pascual M. and Lewis A. 2016. **Effect of a phosphonate antiscalant during Eutectic Freeze Crystallization of a sodium sulphate waste stream,** Industrial and Engineering Chemistry Research, 55 (35), 9378-9386*
11. *Gqebe, S., Rodriguez Pascual, M, Lewis, A.E., 2016. **Modification of the zeta potential of copper sulphide by the application of a magnetic field in order to improve particle settlin**g, JSAIMM 116 (6) 575-580*
12. *Hendricks, U., Rodriguez Pascual, M., Banfieid, J., and Lewis, A.E., 2015. **Measuring precipitation** kinetics of **sparingly soluble salts using shock-freeze TEM**, Journal of Crystal Growth 432,108-115*
13. *Egan, T., Rodriguez Pascual, M. and Lewis, A.E., 2014. **In situ growth measurements of sodium sulphate during cooling crystallization**, Chemical Engineering and Technology, 37 (8), 1283-1290*
14. *Chivavava, J., Lewis, A.E. and Rodriguez Pascual, M., 2014. **Effect of operating conditions on ice quality in continuous Eutectic Freeze Crystallization**, Chemical Engineering and Technology, 37 (8), 1314-1320*
15. *Randall, D.G., Zinn, C and Lewis, A.E., 2014. **Treatment of textile wastewaters using Eutectic Freeze Crystallisation**, Water Science and Technology, 70 (4), 736–741*
16. *Nduna, M., Lewis, A.E. and Nortier, P., 2014. **A model for the zeta potential of copper sulphide** Colloids and Surfaces A: Physicochemical and Engineering Aspects, 441, 643–652*
17. *Kapembwa, M., Rodroguez Pascual, M. and Lewis, A.E., 2014. **Heat and mass transfer effects of ice growth mechanisms in pure water and aqueous solutions**, Crystal Growth and Design, 14, 389-395*
18. *Apsey, G. and Lewis, A.E., 2013. **Selenium impurity in sodium sulphate decahydrate formed by Eutectic Freeze Crystallization of industrial waste brine**, Journal of the South African Institute of Mining and Metallurgy (JSAIMM) Special Edition, 113, 415-421*
19. *Nduna, M., Rodriguez Pascual, M. and Lewis, A.E., 2013. **Effect of dissolved precipitating ions on the settling characteristics of copper sulphide**, Journal of the South African Institute of Mining and Metallurgy (JSAIMM) Special Edition, 113, 435-439*
20. *Randall, D.G., Mohamed, R., Nathoo, J., Rossenrode, H. and Lewis, A.E., 2013. **Improved calcium sulphate recovery from a reverse osmosis retentate using Eutectic Freeze crystallization**, Water Science and Technology, 67, 1, 139-146*
21. *Randall, D.G., Nathoo, J., Genceli-Guner, F.E., Kramer, H., Witkamp, G. and Lewis. A.E., 2012. **Determination of the metastable ice zone for a sodium sulphate system**. Chemical Engineering Science, 77, 184-188*
22. *Mokone, T.P., van Hille, R.P. and Lewis, A.E., 2012. **Effect of post-precipitation conditions on surface properties of colloidal metal sulphide precipitates**, Hydrometallurgy, 119–120, May, 55-66*

23. *Mokone, T.P., Lewis, A.E. and van Hille, R.P., 2012.* ***Metal sulphides from wastewater: Assessing the impact of supersaturation control strategies****, Water Research, 46, 7, May, 2088-2100*
24. *Bhikha, H., Lewis, A.E. and Deglon, D.A., 2011.* ***Reducing water consumption at Skorpion Zinc****, Journal of the South African Institute of Mining and Metallurgy (JSAIMM), 111, June, 437-442*
25. *Nortier, P., Chagnon, P. and Lewis, A.E., 2011.* ***Modelling the solubility in Bayer liquors: a critical review and new models****, Chemical Engineering Science, 66, 12, 2596-2605*
26. *Lewis, A.E. and Mangere, M., 2011.* ***Reactive crystallization of copper selenide at very high supersaturation: a challenge to classical crystallization theory for sparingly soluble salts****, Chemical Engineering and Technology, 34, 4, 517-524*
27. *Randall, D.G., Nathoo, J. and Lewis, A.E., 2011.* ***A case study for treating a reverse osmosis brine using Eutectic Freeze Crystallization - approaching a zero-waste process****, Desalination, 266, 1-3, 256-262*
28. *Mangere, M., Nathoo, J. and Lewis, A.E., 2010.* ***Nucleation kinetics of selenium (+4) precipitation from acidic copper sulphate solution****, Journal of Crystal Growth, 312, 21, 3178-3182*
29. *Lewis, A.E., 2010.* ***A review of metal sulphide precipitation****, Hydrometallurgy, 104, February, 222-234*
30. *Mokone, TP., van Hille, R.P. and Lewis, A.E., 2010.* ***Effect of solution chemistry on particle characteristics during metal sulphide precipitation****, Journal of Colloid and Interface Science, 351, 1, 10-18*
31. *Lewis, A.E., Khodabocus, F., Dhokun, V. and Khalife, M., 2010.* ***Thermodynamic simulation and evaluation of sugar refinery evaporators using a steady state modelling approach****, Applied Thermal Engineering, 30, 14-15, 2180-2186*
32. *Reddy, S.T., Lewis, A.E., Witkamp, G.J., Kramer, H.J.M. and van Spronsen, J., 2010.* ***Recovery of $Na_2SO_4 \cdot 10H_2O$ from a reverse osmosis retentate by Eutectic Freeze Crystallization technology****, Chemical Engineering Research and Design, 88, 9, 1153-1157*
33. *Andreassen, J.P., Flaten, E.M., Beck, R. and Lewis, A.E., 2010.* ***Investigations of spherulitic growth in industrial crystallization****, Chemical Engineering Research and Design, 88, 9, 1163-1168*
34. *Lewis, A.E., Nathoo, J., Thomsen, K., Kramer, H.J., Witkamp, G.J., Reddy, S.T. and Randall, D.G., 2010.* ***Design of a Eutectic Freeze Crystallization process for multicomponent waste water stream****, Chemical Engineering Research and Design, 88, 9, 1290-1296*
35. *Hove, M., van Hille, R. and Lewis, A.E., 2009.* ***The effect of different types of seeds on the oxidation and precipitation of iron****, Hydrometallurgy, 97, March, 180-184*
36. *Ntuli, F. and Lewis, A. E., 2009.* ***Kinetic modelling of nickel powder precipitation by high-pressure hydrogen reduction****, Chemical Engineering Science, 64, 9, 2202-2215*
37. *McGeorge, B., Gaylard, P. and Lewis, A.E., 2009.* ***Mechanism of rhodium (III) co-precipitation with copper sulphide (at low Rh concentrations) incorporating a new cationic substitution reaction path****, Hydrometallurgy, 96, March, 235-245*
38. *Hove, M., van Hille, R. and Lewis, A.E., 2008.* ***Mechanisms of formation of iron precipitates from ferrous solutions at high and low pH****, Chemical Engineering Science, 63, 6, 1626-1635*
39. *Karbanee, N., van Hille, R. and Lewis, A.E., 2008.* ***Controlled nickel sulphide precipitation using gaseous hydrogen sulphide****, Industrial and Engineering Chemistry Research, 5, 47, 1596-1602*
40. *Hove, M., van Hille, R.P. and Lewis, A.E., 2007.* ***Iron solids formed from oxidation precipitation of ferrous sulphate solutions****, AIChEJ, 53, 10, 2569-2577*
41. *Chiang, Y-L., Nathoo, J. and Lewis, A.E., 2007.* ***Investigating the control of manganese sulphide precipitation****, Journal of the South African Institute of Mining and Metallurgy (JSAIMM), 107, April 2-12*

42. *Ntuli, F. and Lewis, A.E., 2007.* ***The influence of iron on the precipitation behaviour of nickel powder****, Chemical Engineering Science, 62, 14, 3756-3766*
43. *Lewis, A.E., 2006.* ***Fines formation (and prevention) in seeded precipitation processes****, Kona, 24, 2006, 119-125 (Invited contribution)*
44. *Ntuli, F. and Lewis, A.E., 2006.* ***The effect of a morphology modifier on the precipitation behaviour of nickel powder****, Chemical Engineering Science, 61, 17, 5827-5833*
45. *Zhang, Y. and Lewis, A.E., 2006.* ***Effect of crystallization on the reaction kinetics of nickel reduction by hydrogen****, Chemical Engineering Science, 61, 12, 4120-4125*
46. *Lewis, A.E. and van Hille, R.P., 2006.* ***An exploration into the sulphide precipitation method and its effect on metal removal,*** *Hydrometallurgy, 81, April, 197-204*
47. *Ochieng, A. and Lewis, A.E., 2006.* ***CFD simulation of nickel solids off-bottom suspension and cloud height****, Hydrometallurgy, 82, February, 1-12*
48. *Taty-Costodes, V.C. and Lewis, A.E., 2006.* ***Reactive crystallization of nickel hydroxy-carbonate in a fluidised bed reactor: Fines production and column design****, Chemical Engineering Science, 61, 5, 1377 – 1385*
49. *Lewis, A.E. and Swartbooi, A., 2006.* ***Factors affecting metal removal in mixed sulphide precipitation****, Chemical Engineering and Technology, 29, 2, 277-280*
50. *Ochieng, A. and Lewis, A.E., 2006.* ***Nickel solids concentration distribution in a stirred tank****, Minerals Engineering, 19, 2, 180–189*
51. *Taty-Costodes, V.C., Mausse, C.F., Molala, K. and Lewis, A.E., 2006.* ***A simple approach for determining particle size enlargement mechanisms in nickel reduction****, International Journal of Mineral Processing, 78, 2, 93-100*
52. *Hounslow, M.J.H., Lewis, A.E., Sanders, S.J. and Bondy, R., 2005.* ***Generic crystallizer model: I. Framework for a well-mixed compartment****, AIChE J, 51, 11, 2942-2955*
53. *Lacour, S., van Hille, R., Petersen, K. and Lewis, A.E., 2005.* ***Comparison of simulators for process and aqueous chemistry modelling****, AIChE J, 51, 8, 2358–2368*
54. *van Hille, R.P., Petersen, K. and Lewis, A.E., 2005.* ***Copper sulphide precipitation in a fluidised bed reactor****, Chemical Engineering Science, 60, 2571-2578*
55. *Pillay, V., Gärtner, R.S., Himawan, C., Seckler, M.M., Lewis, A.E. and Witkamp, G.J., 2005.* ***$MgSO_4+H_2O$ at eutectic conditions and thermodynamic solubility products of $MgSO_4 \cdot 12H_2O(s)$ and $MgSO_4 \cdot 7H_2O(s)$****. Journal of Chemical and Engineering Data, 50, 2, 551–555*
56. *Seewoo, S., van Hille, R. and Lewis, A.E., 2004.* ***Heavy metal precipitation in scaling waters****, Hydrometallurgy, 75, November, 135-146*
57. *Roberts, M. and Lewis, A.E., 2003.* ***Three phase mixing studies for nickel precipitation****, Minerals Engineering, 16, 9, 881-883*
58. *Lewis, A.E. and Roberts, M., 2003.* ***Using fractal structure and flow properties to describe morphology of nickel crystals****, Journal of the Minerals, Metals and Materials Society (JOM), 55, February, 59-61*
59. *Guillard, D. and Lewis, A.E., 2002.* ***Optimisation of nickel hydroxycarbonate precipitation using a laboratory pellet reactor****, Industrial and Engineering Chemistry Research, 13, 41, 3110–3114*
60. *Knobel, A.K. and Lewis, A.E., 2001.* ***A mathematical model of a high sulphate wastewater anaerobic treatment system****, Water Research, 36, 257-265*
61. *Butler, B., Centurier-Harris, J.P. and Lewis, A.E., 2001.* ***Technical Note: Improving platinum precipitation processes****, Minerals Engineering, 14, 8, 905–909*

62. *Case, J., Gunstone, R. and Lewis, A.E., 2001.* ***Students' metacognitive development in an innovative second year engineering course****, Research in Science Education, 31, 3, 331-355*
63. *Lewis, A.E. and Beautement, C., 2001.* ***Prioritising objectives for waste reprocessing: A case study in secondary lead refining,*** *Waste Management, 22, 677-685*
64. *Guillard, D. and Lewis, A.E., 2001.* ***Nickel Carbonate precipitation in a fluidised bed reactor****, Industrial and Engineering Chemistry Research, 23, 40, 5564-5569*
65. *Lewis, A.E. and Roberts, M., 2001.* ***Quantifying morphology of nickel crystals****, Journal of the South African Institute of Mining and Metallurgy (JSAIMM), 8, 101, 421-426*
66. *Lewis, A.E. and Hugo, A., 2000.* ***Characterisation and batch testing of a secondary lead slag****, Journal of the South African Institute of Mining and Metallurgy (JSAIMM), 10, 365-370*
67. *Cohen, B., Lewis, A.E, Petersen, J., von Blottnitz, H., Drews S.C. and Mahote, S.I., 1999.* ***The TCLP and its applicability for the characterisation of worst case leaching of wastes from mining and metallurgical operations,*** *Advances in Environmental Research, 3 U5-165*
68. *Ozinsky A.E. and Ekama G.A., 1995.* ***Secondary settling tank modelling and design: (1) Review of theoretical and practical developments****, Water S.A., 21, 4, 325-332*
69. *Ozinsky A.E. and Ekama G.A., 1995****. Secondary settling tank modelling and design: (2) Linking of sludge settleability measures****, Water S.A., 21, 4, 333-350*
70. *Billing, A.E. and Dold, P.L., 1988.* ***Modelling techniques for biological reaction systems: (1) Mathematical description and model representation****, Water S.A., 14, 4, 185-192*
71. *Billing A.E. and Dold, P.L., 1988.* ***Modelling techniques for biological reaction systems: (2) Modelling of the steady state case****, Water S.A., 14, 4, 193-206*
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11. Lewis, A.E. 2015. Popular talk: "***Eutectic Freeze Crystallization, and why we should be cool about it…",*** *The Astronomical Society of Southern Africa (ASSA), Garden Route Centre, 18 July 2015*
12. Lewis, A.E., 2014. ***Modern Alchemy: Turning toxins into treasure,*** *Café Scientifique, Irma Stern Museum, Rosebank, Cape Town, 3 June 2014,* http://www.youtube.com/watch?v=aDPPwJxjUL4
13. Lewis, A.E., 2014. ***Modern Alchemy,*** *BBC World Service - The Forum, Radio program, London, England, 15 January 2014,* ***Radio broadcast*** http://www.bbc.co.uk/iplayer/episode/p01q5cg6/The_Forum_Modern_Alchemy/
14. Lewis, A.E., 2012. ***Visions for Chemical Engineering****, Lappeenranta University of Technology, Video recording,* http://www.youtube.com/watch?v=E332uTutP2E
15. Lewis, A.E., 2012. ***Change the world and study Chemical Engineering****, Lappeenranta University of Technology, Video recording,* http://www.youtube.com/watch?v=G-qQo8_6Drg
16. Lewis, A.E., 2011. ***Be bold and mighty forces will come to your aid****, TEDX, Cape Town, Ratanga Junction, Canal Walk, Western Cape, April, 2011* http://www.youtube.com/watch?v=lWsqSRos1LY

RESEARCH SUPERVISION

Postgraduate Graduated:

1. Brenda Mehlo, ***Brine systems and characterisation****, MSc, 2020*
2. Senzo Mgabhi, ***The hydrated lime dissolution kinetics in acid mine drainage neutralization****, MSc, 2020*
3. Cledwyn Mangunda, ***An Investigation into Fe (III) Oxyhydroxide Precipitation in Lime Neutralization Processes****, PhD, 2020*
4. Edmund Engelbrecht, ***Production scale semi-batch rhodium-DETA precipitation model****, PhD, 2019*
5. Benita Aspeling ***Yield and purity of salts recovered in a multi-component system using Eutectic Freeze Crystallization****, MSc, 2019*
6. Genevieve Harding, ***South African industrial effluents and their characterisation****, MSc, 2018.*
7. Debbie Jooste, ***Ice scaling in continuous Eutectic Freeze Crystallization****, MSc, June 2016*
8. Chiara Maharaj, ***Treatment of a multicomponent mining effluent using calcium hydroxide in fluidized bed crystallize****r, MSc, June 2016*
9. Sibongiseni Gqebe***, Improving the settleability of a metal sulphide suspension by the application of a magnetic field,*** *MSc, December 2015*

10. Edward Peters, ***Effect of antiscalants during Eutectic Freeze Crystallization of a reverse osmosis retentate***, MSc June 2015
11. Vuyiswa Dube, ***Study of selective removal of CoS and NiS during purification of $MnSO_4$***, MSc June 2015
12. Emily Mayer, ***Case study for an economical evaluation of Eutectic Freeze Crystallization and Evaporative Crystallization for a Brazilian refinery waste stream***, PhD, December 2015
13. Brian Willis, ***Development of measurement techniques for aggregation in precipitation systems***, MSc, June 2014
14. Tim Egan, ***Factors affecting the incorporation of impurities during cooling crystallisation***, MSc, December 2013
15. Jemitias Chivavava, ***Effect of operating conditions on product quality in continuous Eutectic Freeze Crystallization***, MSc, December 2013
16. Michael Kapembwa, ***Heat and mass transfer effects of ice growth mechanisms in water and aqueous solutions***, MSc, June 2013
17. Moses Nduna, ***Post precipitation treatment of CuS particles to improve settleability***, MSc, June 2013
18. Emily Musil, ***Developing methods to measure the precipitation kinetics of sparingly soluble systems***, MSc, December 2011
19. Grant Apsey, ***Impurities in crystals formed by Eutectic Freeze Crystallization***, MSc, December 2011
20. Nobert Paradza***, An investigation into the suspension, attrition and breakage of nickel crystal during the nickel reduction process***, MSc, June 2011
21. Rinesh Jivanji***, Industrial application of Eutectic Freeze Crystallization***, MSc, June 2011
22. Cornelia Ras***, An industrial ecology approach to salts-related, environmental sustainability problems in a large, inland industrial complex***, MSc, June 2011
23. Thebe Mokone, ***Metal sulphide precipitation: effect of operational parameters on particle characteristics and process efficiency***, PhD, December 2010
24. Dyllon Randall***, Development of a brine treatment protocol using Eutectic Freeze Crystallization***, PhD, December 2010
25. Premesh Govan, ***Measurement and modelling of solubility data for sparingly soluble precipitation systems***, MSc, December 2010
26. Botlhe Mokgethi***, Investigation of crystallization kinetics in a turbulent environment***, MSc, December 2010
27. Yu Lun Chiang, ***Antisolvent gibbsite crystallization from synthetic Bayer liquor***, MSc, June 2010
28. Murehwa Mangere***, Investigation into the kinetics, mechanisms and particle characteristics of selenium precipitation from copper sulphate solution***, MSc, June 2010
29. Ndisha Mbedzi, ***An investigation into the removal of aluminosilicates scaling species by activated alumina***, MSc, June 2010
30. Lindizwe Zibi***, Industrial brine characteristics and modelling***, MSc, June 2010
31. Rendani Ramaru, ***Struvite precipitation in a fluidised bed reactor,*** MSc, December 2009
32. Harshad Bhika, ***Technological challenges in mineral processing and extractive metallurgy***, MSc, June 2009
33. Mfandaidza Hove, ***Iron precipitation in acid mine drainage***, PhD, December 2008
34. Freeman Ntuli, ***Mechanisms of precipitation in the reduction of nickel via hydrogen***, PhD, December 2008
35. Barry McGeorge, ***Mechanisms of rhodium precipitation***, MSc, December 2007
36. Nazneen Karbanee***, Investigation into the precipitation of mixed cobalt and nickel sulphides***, MSc, June 2007
37. Celo Mausse***, Population balance modelling in nickel reduction systems***, MSc, December 2006
38. Aoyi Ochieng***, A hydrodynamic study of nickel suspension in stirred tanks***, PhD, December 2005

39. Ashton Swartbooi, ***Cobalt and nickel sulphide precipitation in a fluidised bed reactor**, MSc, December 2005*
40. Venusan Pillay***, The simulation of electrolyte systems: the system K-Na-Mg-Cl-SO_4-H2**O, MSc, December 2004*
41. Jeeten Nathoo, ***Optimisation of electrolyte composition and operating parameters for the electropolishing of 304 stainless steel**, MSc, December 2003*
42. Shilpa Seewoo, ***Morphology control in gypsum precipitation**, MSc, December 2003*
43. Karen Peterson, ***Copper sulphide precipitation for treatment of acid mine drainage**, MSc, December 2002*
44. Craig Beautement, ***Treatment of secondary lead slag for environmental protection**, MSc, June 2001*
45. Damien Guillard, ***Nickel carbonate precipitation in a fluidised bed reactor**, MSc, December 2001*
46. Jonathan Centurier-Harris***, Studies in the crystallisation behaviour of potassium nitrate**, MSc (co-supervised with Prof G van Rosmalen, TU Delft, Netherlands), December 2000*
47. Antony Knobel***, A mathematical model of a high sulphate wastewater anaerobic treatment system,** MSc, December 1999*
48. Leonore Cairncross, ***Simulation of ionic precipitation of metal hydroxides from industrial waste water**, MSc (co-supervised with Prof JG Petrie, University of Sydney), December 1998*
49. Alex Pehlken***, Investigation into treatment of secondary lead slag**, University of Aachen, Diplomarbeit, December 1997*

Post-Doctoral Fellows supervised

1. *Dr QinHai Li, PhD Chinese Academy of Science, Institute of Salt Lakes, XiNing, Qinghai Province, China, 2018*
2. *Dr Sivapregasen Naidoo, PhD Western Cape, South Africa, 2010*
3. *Dr Gillian Balfour, PhD Cape Town, South Africa, 2007 and 2008*
4. *Dr Vinit Mishra, PhD New Delhi, India, 2007*
5. *Dr Christian Taty Costodes, PhD Paris, France, 2004 and 2005*
6. *Dr YiFei Zhang, PhD Beijing, China, 2004 and 2005*
7. *Dr Rob van Hille, PhD Rhodes, South Africa, 2002, 2003 and 2004*
8. *Dr Stella Lacour, PhD Limoges, France, 2001*
9. *Dr Bronwen Butler, PhD Queensland, Australia, 2000*

Currently supervised:

1. *Lerato Motsepe, **Crystal Engineering in Eutectic Freeze Crystallization**, MSc*
2. *Anotidaishe Dondo, **Consistent production of both ice and salt in EFC**, MSc*
3. *Taona Chagwedera, **Seeding to prevent gypsum scaling in EFC**, MSc*
4. *Jonathan Sibanda,* **Novel crystallizer designs for EFC,** MSc
5. *Hilton Heydenrych, **Systematic comparison of the effectiveness of water treatment processes**, PhD*
6. *Max Pelser, **Scale-up of the reactive precipitation of Nickel Hydroxide to industrial application,** PhD*
7. *Jacolien Du Plessis, **Antisolvent precipitation of rare earth elements from waste streams using a fluidised bed reactor**, PhD*
8. *Buhle Nxiwa, **REE recovery from synthetic NiMH battery sulfuric acid leach liquors,** MSc*

Honours level

1. *Phendulwa Nondonga and Mbhoni Rikhotso,* ***Lithium recovery from brines using EFC****, (Final Mark %), 2020*
2. *Siphesihle Jwara and Ronaldo Ndlovu,* ***Identifying crystallization mechanisms in recovery of Rare Earth Element [REE] from leach liquors using antisolvent crysatllization****, (Final Mark %), 2020*
3. *Brandon Douwie and Kylie Wan,* ***Modelling of selective recovery of REE from leach liquors using precipitation****, (Final Mark %), 2020*
4. *Dane Smith and Jody Smith,* ***Effect of hydrodynamics on Rare Earth Element [REE] recovery from wastes****, (Final Mark 75%), 2019*
5. *Abdul-Malik Lottering and Shurah Mohammed Sheikh,* ***Size, shape and purity of ice crystals in Eutectic Freeze Crystallization [EFC****], (Final Mark 63%), 2019*
6. *Sheena Bemanya and Ashley Mwendia,* ***Size, Shape and purity of salt crystals in Eutectic Freeze Crystallization [EFC****], (Final Mark 68%), 2019*
7. *Matthew Shaw and Terri-Anne Glass,* ***Carbonate precipitation for calcium removal from multi-component saline solutions****, (Final Mark 79%), 2019*
8. *Aaron Smith and Divine Ssebunnya,* ***Treatment of Reverse Osmosis brines using calcium precipitation to prevent scaling in Eutectic Freeze Crystallization treatment****, (Final Mark 77%), 2018*
9. *Julius Manjo,* ***Interaction of solids fraction, Reynolds number and temperature driving force in ice scaling in Eutectic Freeze Crystallization****, (Final Mark 55%), 2018*
10. *Fendi Lin and Anthony Mchendrie,* ***Eutectic Freeze Crystallization for seawater****, (Final Mark 70%), 2017*
11. *Nogues Ollier and Kreelan Chetty,* ***Treatment technologies for recycling effluent at an oil refinery****, (Final Mark 73%), 2017*
12. *Sinethemba Mhlongo and Bonolo Bonokoane,* ***Eutectic Freeze Crystallization for treatment of highly saline brines generated by extraction as part of CO2 storage pressure management****, (Final Mark 65%), 2017*
13. *Lorraine Dzimbanhete and Amulya Mathew,* ***Kinetics of hydrated lime dissolution in the neutralization of acid mine drainage (AMD) using a continuous flow reactor****, (Final Mark 80%), 2017*
14. *Gachoki Tracy Mbiyu and Zipporah Nyokangi,* ***Transformation of metastable Fe(III) oxyhydroxide precipitates in the treatment of AMD****, (Final Mark 71%), 2016*
15. *Linda Foster and Delisha-Ann Naicker,* ***Kinetics of perovskite formation and crystallization****, (Final Mark 71%), 2016*
16. *Sarah Adam and Julia McGregor,* ***Comparison of a heating crystallization with a cooling crystallization process for calcium sulphate removal from a multicomponent brine****, (Final Mark 79%) 2015*
17. *Letlethu Beseti and Reuben Dlamini,* ***Effects of Feed Flow Rate and Concentration on Ferric Sulphate Oxyhdroxide Precipitate Formation****, (Final Mark 69%) 2015*
18. *Chabala Kaongwa and Queen Rugaimukama,* ***Factors affecting scale formation in EFC****, (Final Mark 67%) 2015*
19. *Jade Holt and Rosalind Stegman,* ***Economic comparison of gypsum precipitation in FBC versus an MSMPR****, (Final Mark 57%) 2015*
20. *Sizwe Vidima and Bagcinele Dlamini,* ***In situ investigation of calcium sulphate scaling in a test cell****, (Final Mark 63%) 2014*
21. *Amir Mohd Fauzi and Arthur Gajewski,* ***Optimised heat integration for a combined Reverse Osmosis and Eutectic Freeze Crystallization Process****, (Final Mark 84%) 2014*
22. *Tesha Seeparsad and Chiara Maharaj,* ***Comparison of a Reverse Osmosis/Eutectic Freeze Crystallization process with a cycled Reverse Osmosis-Cooling Crystallisation process****, (Final Mark 84%) 2014*

23. Buhle Manana and Pfano Nembudani, ***Eutectic Freeze Crystallization for treatment of textile waste concentrates***, (Final Mark 68%) 2014
24. Piniel Bengesai and Hiren Makkan, ***Stripping of ammonia from alkaline brine using a novel oscillating multi-grid reactor***, (Final mark 74%) 2013
25. Nicholas Fleischman and Megan Raymond, ***Effect of antiscalants on the solubility, yield and purity of the products in an Eutectic Freeze Crystallization process***, (Final mark 79%) 2013
26. Relebohile Molaoa and Relebohile Sefako, ***Treating heap leach acid using an Eutectic Freeze Crystallization process***, (Final mark 65%) 2013
27. Sibongiseni Gqebe and Faith Ndzimandze, ***Modelling and comparison of acid mine drainage treatment processes***, (Final mark 65%) 2013
28. Firdous Alexander and Daniella Faria, ***Economical and environmental evaluation of Eutectic Freeze Crystallization vs. reverse osmosis for water treatment***, (Final mark 73%) 2013
29. Shadley Martin and Ayesha Rawoot, ***Flow modelling of Eutectic Freeze Crystallization for multi-component brines***, (Final mark 73%) 2013
30. Caitlin Moir and Kelly Brokelmann, ***Determination of crystal defects and liquid-gas inclusions due to degasification bubble formation during cooling crystallization***, (Final mark 81%) 2012
31. Alice Wong and Thilisha Moodley, ***Using an alkaline mine wastewater for CO2 sequestration***, (Final mark 59%) 2012
32. Mesuli Zondo and Sarvesha Moodley, ***FeS slurry for acid mine drainage treatment***, (Final mark 83%) 2012
33. Mohamad Omar and Marasi Monyau, ***Sulphate recovery from acid mine drainage***, (Final mark 73%) 2012
34. Zethu Dlamini and Nicole Gounder, ***Effect of morphology and crystal size distribution on gravitational separation during Eutectic Freeze Crystallization*** ,(Final mark 68%) 2012
35. Estelle Mills and Andrew Payne, ***Heat/mass transfer measurements during Eutectic Freeze Crystallization***, (Final mark 88%), 2011
36. Rizqah Mohamed and Hilton Rossenrode, ***Investigating the characteristics of scaling salts using Eutectic Freeze Crystallization***, (Final mark 87%), 2011
37. Sairisha Ramnanan and Catherine Lukwayo, S***alt purity in Eutectic Freeze Crystallization***, (Final mark 76%), 2011
38. Marc Bagley and Craig Zinn, ***Recovery of dyes and salts from textile wastewaters using Eutectic Freeze Crystallization,*** (Final mark 65%), 2011
39. Alex Madden and Mark Middelhoven, ***Manipulating crystallization temperatures in Eutectic Freeze Crystallization***, (Final mark 64%), 2010
40. Wade Swannell and Matthew Amundsen, ***Isotropic turbulence and its effect on precipitation processes***, (Final mark 53%), 2010
41. Emily Musil and Nerisa Moodley, ***Manganese purification by seeded precipitation***, (Final mark 74%), 2009
42. Karen Ma, and Paul Mphengwa Mabala, ***Control of particle characteristics in NiS precipitation*** ,(Final mark 64%), 2009
43. Muneer Asmal and Rinesh Jivanji, ***Brine analysis and modellin***g, (Final mark 80%), 2008
44. Saud Edries and Niven Harku, ***Eutectic Freeze Crystallization***, (Final mark 72%), 2008
45. Lauren Miller and Mitesh Chuahan, ***Spherulitic growth***, (Final mark 80%), 2008
46. John Terreblanche and Matthew Fry, ***Investigating selective removal of cationic scaling species from gas liquor using alumina***, (Final mark 80%), 2007
47. Motlatsi Mabaso & Rendani Ramaru, ***Removal and recovery of metal salts from acid mine drainage and industrial effluents***, (Final mark 67%), 2007
48. Yu-Lun Chiang and Fabian Petersen, ***Seeded precipitation for impurity removal***, (Final mark 75%), 2006
49. Michelle Bennet and Premesh Govan, ***Brine treatment for water recovery***, (Final mark 79%), 2006

50. James Vardy and Sean Knight, ***Metal removal from acid mine drainage***, (Final mark 67%), 2006
51. Sarashnee Reddy and Lynn Mortinson, ***Scaling in solar water heaters***, (Final mark 64%), 2005
52. Cello Mausse and Keabetswe Molala, ***The population balance as a tool for understanding crystallization***, (Final mark 72%), 2004
53. Nazneen Karbanee and Bianca Carlse, ***Chemical processing of novel anti-malarial drugs***, (Final mark 77%), 2004
54. Eugene Delport and Thehzeeb Akbar, Effect of macromixing time on sodium bicarbonate precipitation (Final mark 65%), 2003
55. Hermita Anand and Bo Robertse, ***Sodium bicarbonate precipitation*** ,(Final mark 75%), 2002
56. Angela Storey and Tamlyn Foster, ***Mixed metal precipitation for treatment of acid mine drainage***, (Final mark 81%), 2002
57. Jeeten Nathoo and Shilpha Seewoo, ***The SPARRO process for desalination of calcium sulphate scaling waters***, (Final mark 79%), 2001
58. Kar Luk and Ashton Swartbooi, ***Performance of a multi impeller reactor for nickel precipitation***, (Final mark 76%), 2001
59. Punish Chikowero and Lerato Motsilanyane, ***Commissioning of a high pressure vessel for nickel precipitation***, (Final mark obtained: 64%), 2000
60. Lasath Punyandeera, ***Promoting size enlargement by reactor design*** ,(Final mark 51%), 2000
61. Kelly Petersen and Mandy Roberts, ***Characterisation of calcium oxide crystallization processes using a multiple technique approach***, (Final mark 73%), 2000
62. Kenneth Kamurasi and Edward Theka, ***Precipitation for removal of metals from acid mine drainage***, (Final mark 63%), 2000
63. Thabo Kgogo and Semano Sekatle, ***Promoting mixing to control nucleation in precipitation systems***, (Final mark obtained: 75%), 2000
64. Glodina Gordon and Tessa Meyer, ***Solids formation by precipitation in mineral processing streams***, (Final mark 66%), 1999
65. Sarah Bross and Catherine Van Hoogstraten, ***Recovery of elemental sulphur from soluble sulphides***, (Final mark 71%), 1999
66. Kim Palmer and Jonathan Centurier-Harris, ***Characterisation and assessment of hazardous waste***, (Final mark 81%), 1998
67. Motshewa Matimolane and Thuto Mosholi, ***Recovery of elemental sulphur from soluble sulphides***, (Final mark 61%), 1998
68. Craig Beautement and Pathmenadin Padayachee, ***Treatment of secondary lead waste for environmental protection***, (Final mark 63%), 1997
69. Bruce Souter and Peter Fiene, ***Modelling of a proposed process for the treatment of acid mine drainage***, (Final mark 74%), 1997
70. Michael Dalby and Murray Roos, ***Modelling of biological systems*** (co-supervised), (Final mark 73%), 1996
71. David Sedgorowane and Bethuel Legabe, ***Fundamentals of ionic precipitation of metal hydroxides*** (co-supervised), (Final mark 55%), 1996

SCHOLARLY ACTIVITIES

- *SAAE Executive Committee 2020 - 2022*
- *Reference group for battery project at KTH Royal Institute of Technology and Uppsala University, since 2020*
- *Member of the Royal Academy of Engineering Steering group for Higher Education Partnerships in sub-Saharan Africa (HEPSSA), since 2020*

- *Expert evaluator for KTH Royal Institute of Technology, Assistant Professor: Department of Chemical Engineering, 2020*
- *External Assessor for tenure of Prof. Gisele Azimi, Departments of Chemical and Applied Chemistry and Materials Science and Engineering, University of Toronto, 2018*
- *External Assessor for Prof. Eoin Casey, School of Chemical and Bioprocess Engineering, University College Dublin, 2018*
- *Project Innovation Awards Judging Panel for the International Water Association, Tokyo, 2018*
- *Selection Committee Member for the University of Johannesburg, Executive Dean: Faculty of Engineering and the Built Environment, 2018*
- *University of Fort Hare: Inauguration of The Chancellor and Vice Chancellor, 2017*
- *Leading Complex change workshop sponsored by USAf (19 – 20 October 2017)*
- *External reviewer on behalf of the Chilean National Commission for Science and Technology (CONICYT) for funding proposals (2017) and for funding proposals and Centre Reviews (2018)*
- *Member of the Scientific Committee for the International Symposium on Industrial Crystallization (ISIC), since 2009*
- *Member of the Scientific Committee for the Bremen International Workshop on Industrial Crystallization (BIWIC), since 2006, incl 2017*
- *Journal referee for AIChEJ, Biotechnology & Bioengineering, Chemosphere, Crystal Growth & Design, Desalination, Hydrometallurgy, Industrial and Engineering Chemistry Research, Journal of Chemical & Engineering Data, Powder Technology, Separation and Purification Technology, Water Research, Water SA, SME*
- *Appointed to the Minister's to Selection Panel for South African Water Boards, Trans Caledon Tunnel Authority Board and Water Research Commission Board, July 2015*

External Examination of Postgraduate Theses

- *PhD thesis, Lappeenranta University of Technology, Lappeenranta, Finland, 2020. Miia John, Separation efficiencies of freeze crystallization in wastewater purification.*
- *PhD thesis, University of British Columbia, Canada, 2013. Mohammad Mokmeli, Kinetics study of selenium and tellurium removal from copper sulphate-sulphuric acid solution.*
- *PhD thesis, University of Wageningen/UNESCO-IHE, Delft, The Netherlands, October 2013. Denys Kristalia Villa Gomez, Simultaneous sulphate reduction and metal precipitation in an inverse fluidized bed reactor.*
- *PhD thesis, University of Toronto, Toronto Canada, February 2010. Gisele Azimi, Evaluation of the potential of scaling due to calcium compounds in hydrometallurgical processes.*
- *PhD thesis, Royal Institute of Technology, Stockholm, June 2009. Kirsten Forsberg, Crystallization of metal fluoride hydrates from mixed acid solutions.*
- *MSc thesis, North West University, May 2009. D.J. Branken, Separation of Zr and Hf via fractional crystallization of K2Zr(Hf)F6: A theoretical and experimental study.*
- *PhD thesis, University of Pretoria, 2004*
- *MSc thesis, University of Stellenbosch, January 2003.*
- *MTech thesis, Cape Technikon, March 1998*

CONTINUING EDUCATION

72. *Lewis, A.E., 2015. "Introduction to EFC and to aqueous chemistry modelling", Course for Eskom participants, Eskom Research Centre, Rocheville, Gauteng, March 2015*
73. *Lewis, A.E., 2014. "Understanding crystallization & precipitation processes", Course for industrial participants, Isisango Conference Centre, Midrand, Gauteng, March 2014*

74. *Lewis, A.E., 2011. Solids suspension, attrition and breakage, Presentation to Plant Personnel at Murrin Murrin, Australia, March 2011*
75. *Lewis, A.E., 2011. Fundamental aspects of nickel reduction, Presentation to Plant Personnel at Murrin Murrin, Australia, March 2011*
76. *Lewis, A.E., 2011. Factors affecting gypsum morphology, Presentation to Plant Personnel at Murrin Murrin, Australia, March 2011*
77. *Lewis, A.E., 2011. Crystallisation and precipitation', Presentation to University of Stellenbosch, Faculty of Heath Sciences, Department of Biomedical Sciences, Stellenbosch, May 2011*
78. *Lewis, A.E., Manganese Metal Company, 2010. Challenges in sulphide crystallization, MMC Offices, Nelspruit, Mpumalanga, February 2010*
79. *Lewis, A.E., 2009. "Understanding industrial crystallization processes", Course for Exxaro - Zincor delegates at Zincor offices, Springs, Gauteng, October 2009*
80. *Lewis, A.E., 2007. "Understanding crystallization & precipitation processes", Course for industrial participants in association with TU Delft (Prof GM van Rosmalen) Isisango Conference Centre, Midrand, Gauteng, March 2007*
81. *Lewis, A.E., 2006. "Understanding an industrial purification process", course for industrial participants, Manganese Metal Company, Nelspruit, February 2006*
82. *Lewis, A.E., 2005. "Precipitation for metal recovery and removal in hydrometallurgical processes", Presentation to Hydrometallurgy course for industrial participants, University of Cape Town, Jan/Feb 2004 and Jun/July 2005*
83. *Lewis, A.E., 2004. "Industrial precipitation and crystallisation", Course for industrial and academic participants in collaboration with Prof M Seckler of the Institute for Technological Research (IPT), Cidade Universitária, Sao Paulo, Brazil, November 2004*
84. *Lewis, A.E., 2004. "Crystallisation and precipitation as rate controlled molecular separations", SEPSA Separation Technology week, Potchefstroom University, Gauteng, November 2004*
85. *Lewis, A.E., 2004. Association for Crystallisation Technology, 13th Larson Workshop, Chicago Illinois, USA, one of 38 invited and funded academic delegates, , October 2004*
86. *Lewis, A.E., 2004. "Precipitation: Understanding, optimisation and design", course for industrial participants, Zincor, Springs, Gauteng, September 2004*
87. *Lewis, A.E., 2004. "Crystallisation and precipitation: Theory and practice". Course for industrial participants in association with TU Delft (Prof GM van Rosmalen) Isisango Conference Centre, Midrand, Gauteng, April 2004*
88. *Lewis, A.E., 2001. "Controlling precipitation processes", Convenor of 3-day course presented at Glenburn Lodge, Gauteng; in collaboration with Prof GM van Rosmalen and A/Prof HM Kramer of Delft Technical University, The Netherlands, March 2001*

OTHER RESEARCH/TECHNICAL ACTIVITIES

10 Water Research Commission published reports, 66 scientific/scholarly presentations at conferences, 37 postgraduate (PhD and MSc) students supervised/co-supervised; 8 Post-Doctoral Fellows supervised, 103 BSc (Chem Eng) Honours students supervised; More than 100 Technical reports to Industry

UNIVERSITY MANAGEMENT AND ADMINISTRATION

University:

1. *Futures Think Tank 2.0 (2020 -)*
2. *Teaching Online Task Team (2020 -)*
3. *Selection committees for the University Vice Chancellor, Deputy Vice Chancellor (Teaching and Learning), Dean of Science, Dean of CHED, Executive Director: Research*

4. *Vision 2030 Task Team [2019 -*
5. *Senate Academic Planning and Development Committee (2018 -)*
6. *Futures Think Tank (2018 – 2020)*
7. *Consultative Forum for Academic Staff Matters, member (2018 -)*
8. *Institutional Forum -Council working group on Private Security, member (2017 – 2020)*
9. *Deans Representative on University Resources Allocation Advisory Group (2017 -)*
10. *Deans Representative on Council Commission to Review Committees (2017 -)*
11. *University Works of Art Committee (2017 -)*
12. *University Orator, (2010 – 2015)*
13. *URC Committee on Research Reviews, (2011-)*
14. *Senate Executive Committee, member (2004-present)*
15. *Senate, member (2003-)*

Faculty:

16. *Faculty Examinations Committee, member (2013 -)*
17. *Dean's Advisory Committee, member (2013 -)*
18. *Promotion and Remuneration Committee, member (2013 -)*
19. *Various Faculty Selection Committees for School of Architecture, Planning and Geomatics, Civil, Chemical, Electrical and Mechanical Engineering and Centre for Higher Education Development, member*
20. *PGPAC-Postgraduate Planning & Administration Committee, member (2011- 2012)*
21. *Task Group for the UCT Water Research Institute, convenor (2010-2012)*
22. *EBE Faculty Board, member (1996 -)*
23. *University Science Faculty Board as EBE Faculty Representative, member (2010-2011)*
24. *EBE URC Block Grants Committee, member (2010)*
25. *Working Group on Research for Academic Ad Hominem Promotions, convenor (2007- 2012)*
26. *Faculty Human Resources Committee, member (2007- 2012)*
27. *Committee of Assessors, Faculty of Engineering and the Built Environment, member (2006 -)*
28. *Faculty Cost Recovery Task Group, convenor*
29. *Faculty Working Group on Postgraduate Supervision, convenor*
30. *Faculty Equipment Committee, departmental representative*

Department:

31. *Head of Department (2013-2015)*
32. *Departmental Representatives Committee, member (2013 -)*
33. *SARChi Chair, Selection Committee, member (2011)*
34. *Postgraduate Studies, director (July-December 2006, 2011-2012)*
35. *Department of Chemical Engineering, deputy head of department (May 2010– March 2012)*
36. *Departmental Seminar Programme, convenor (2006)*