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DR LINETTE TWIGGE

BIRTH DATE	7 September 1974
MAIDEN NAME	Bennie
GENDER	Female
MARITAL STATUS	Married
NATIONALITY	South African
PERSONAL PROFILE	I am a positive, self-motivated worker with a willingness to accept responsibility and challenges. One of my skills are time management with a sense of urgency and I am able to use available resources optimally. I also excel at analytical problem solving.
SKILLS & ABILITIES	Nuclear Magnetic Resonance (NMR) Spectroscopy; Liquid-liquid, Solid Phase and Precipitation extractions from plasma, urine and whole blood; HPLC-MS/MS analysis and method development; Qualitative and Preparative scale thin layer chromatography (TLC and PLC); Column chromatography; Organic Synthesis; Compiling Standard Operating Procedures (SOPs); Surfactant Research
EXPERIENCE	**LECTURER, DEPARTMENT OF CHEMISTRY, UNIVERSITY OF THE FREE STATE, BLOEMFONTEIN, SOUTH AFRICA** **July 2011 – Present** • Training of post-graduate students to perform basic (e.g. 1D ^{1}H, ^{31}P and ^{13}C NMR), as well as more advanced (e.g. 2D NMR and solvent suppression) experiments on the 300 MHz Fourier, 400 MHz AVANCE III and 600 MHz AVANCE II Bruker NMR spectrometers. • Co-supervisor of M.Sc. Students

- The setting-up of more complex NMR techniques, e.g. Solid-state NMR experiments, 1D experiments of X nuclei, Multinuclear 2D experiments, ^{13}CO exchange reactions, Low-temperature NMR and Determination interproton distances by NOE quantifications.
- Applying these techniques to current research being done at the department.
- General administration of the NMR laboratory.
- General maintenance of all three spectrometers (e.g. pulse calibrations and cryogenic fills).

SENIOR BIOANALYST, PAREXEL EARLY PHASE, BLOEMFONTEIN, SOUTH AFRICA

October 2007 – June 2011

Method development (extraction of exogenous and endogenous compounds from body fluids and other materials, followed by quantitative analysis with HPLC-MS/MS) and validation of analytical methods for the quantification of drugs in biological fluids. Supervising of the production phases of quantitative and qualitative analytical procedures. Responsible for strict adherence to project timelines. Responsible for analytical run acceptance and instrument performance. Assist and train bioanalysts in method development. Writing, maintaining and complying with Standard Operating Procedures relevant to area of work. Entering of new reference standards into the database.

BIOANALYST, PAREXEL EARLY PHASE, BLOEMFONTEIN, SOUTH AFRICA

October 2005 – September 2007

Method development and quantitative analysis of drugs in biological fluids.

SENIOR SCIENTIST (ANALYTICAL TECHNOLOGY), SASOL TECHNOLOGY R&D, SASOLBURG, SOUTH AFRICA

August 2001 – September 2005

Operate Bruker 500MHz AVANCE II, Varian 600 MHz Inova and Varian 400MHz Mercury NMR spectrometers. Perform 1D and 2D high-pressure NMR experiments in order to study various catalytic cycles by determining the structures of the catalytic species present during the different stages of the catalytic cycle. Study the influence of different additives on catalytic species by using high pressure NMR techniques. Determine percentage branching of detergent alcohols with NMR methods. Structure elucidation of organic compounds obtained from different processes. Write macros for NMR software applications.

SENIOR SCIENTIST (SURFACTANT RESEARCH), SASOL TECHNOLOGY R&D, SASOLBURG, SOUTH AFRICA

May 2000 – July 2001

Synthesize surfactant samples (ethoxylates, alcohol sulfates and ethoxylate sulfates) from various detergent alcohols. Determine performance properties of surfactants e.g. surface properties, phase behavior, rheology and contact angles. Interpret results and write reports. Set up operating procedures for a Krüss Surface Tensiometer and a Krüss Drop Shape Analyzer.

EDUCATION

UNIVERSITY OF THE FREE STATE, BLOEMFONTEIN, SOUTH AFRICA

B.Sc (1995) – MAIN SUBJECTS: CHEMISTRY AND PHYSICS
B.Sc.HONS (1996) – CHEMISTRY
M.Sc UPGRADED TO Ph.D (1998)
Ph.D. (1999) – ORGANIC CHEMISTRY (The Structure and Chemical Elucidation of the Heterogeneous Interflavanyl Bonds in Oligomeric Proteracacinidins from *Acacia Caffra*)

PRIZES AND AWARDS

Siemens-Prize For Highest Marks In Physics (1994)
Sasol-Prize For Highest Marks In Chemistry (1996)
James Moir Medal For Highest Marks In Chemistry (1996)

ADDITIONAL COURSES

BRUKER CP/MAS NMR Course (Bruker, Rheinstetten, Germany)
04/10/2016 – 07/10/2016
BRUKER AVANCE ADVANCED NMR Course (Bruker, Rheinstetten, Germany)
27/02/2012 – 02/03/2012
WHO/TDR-Workshop on Good Laboratory Practice (UFS)
04-06/Jul/2007
Basic LC/MS Training 4000 QTRAP (Applied Biosystems, Darmstadt Germany)
02-05/May/2006
Gas Chromatography Mass Spectroscopy Course
14–17/Mar/2005
Article Writing Course (Sasol)
02–03/Feb/2005
Intellectual Property Training (Sasol)
16/Nov/2004
VNMR 2D Course (Varian, Darmstadt Germany)
01-05/Mar/2004
VNMR Basic Operations Course (Varian, Darmstadt Germany)
25-27/Feb/2004
Automation Course for VNMR (Varian, Darmstadt Germany)
24/Feb/2003
VNMR Chempack Course (Varian, Darmstadt Germany)
23/Feb/2003

Short Course in Applied Surfactant Science and Technology (Sasol)
12 – 14/Mar/2001

PUBLICATIONS

Loke, P.F., Kotzé, E., Du Preez, C.C., Twigge, L., Dynamics of soil carbon concentrations and quality induced by agricultural land use in central South Africa, **Soil Science Society of America Journal**, 2019, **In press**. doi:10.2136/sssaj2018.11.0423

Schutte-Smith, M., Roodt, A., Alberto, R., Twigge, L., Visser, H.G., Kirsten, L., Koen, R., Structures of rhenium(I) complexes with 3-hydroxyflavone and benzhydroxamic acid as *O,O'*-bidentate ligands and confirmation of π-stacking by solid-state NMR spectroscopy, **Acta Cryst.**, 2019, **C75**, 378 – 387. doi.org/10.1107/S2053229619002717

Manicum, A-L.E., Schutte-Smith, M., Alexander, O.T., Twigge, L., Roodt, A., Visser, H.G., First kinetic data of the CO substitution in *fac*-[Re(*L,L'*-Bid$(CO)_3$(X)] complexes (*L,L'*-Bid = acacetylacetonate or tropolonate) by tertiary phosphines PTA and PPh_3: Synthesis and crystal structures of water-soluble rhenium(I) tri- and dicarbonyl complexses with 1,3,5-triaza-7-phosphaadamantane (PTA), **Inorganic Chemistry Communications**, 2019, **101**, 93 – 98.

Loke, P.F., Kotzé, E., Du Preez, C.C., Twigge, L., Long-term effects of wheat production management practices on some carbon fractions of a semiarid Plinthustalfs, **Soil Research**, 2018, **56**, 601 – 614.

Swart, M.R., Twigge, L., Marais, C., Bezuidenhoudt, B.C.B., A variable temperature NMR analysis and resonance assignment of the Grubbs second generation catalyst, **Polyhedron**, 2018, **152**, 31 – 36.

Stuurman, N.F., Buidendach, B.E., Twigge, L., Swarts, P.J., Conradie, J., Rhodium(triphenylphospine)carbonyl-2,4-dioxo-3-pentyl-4-decanyloxybenzoate: synthesis, electrochemistry and oxidative addition kinetics, **New J. Chem.**, 2018, **42**, 4121 – 4132.

Landman, M., Fraser, R., Twigge, L. and Conradie, J., Fischer aminocarbene conformers containing a 2-thienyl of 2-furyl ring: A crystallographic, NMR and DFT study, **Journal of Coordination Chemistry**, 2015, Vol. 68, No. 14, 2388 – 2408.

Purcell, W., Conradie, J., Chiweshe, T.T., Venter, J.A., Twigge, L. and Coetzee, M.P., Characterization and oxidative addition reactions of rhodium(I) carbonyl

cupferrate diphenul-2-pyridylphosphine complexes, **Journal of Organometallic Chemistry**, 2013, 745-746: 439-453.

Ferreira A.C., Crous R., Bennie L., Meij A.M.M., Blann K., Bezuidenhoudt B.C.B., Young D.A., Green M.J., Roodt A., Borate esters as alternative acid promoters in the Palladium-catalyzed methoxycarbonylation of ethylene, **Angew. Chem. Int. Ed.**, 2007, **46**, 2273 – 2275.

Crous R., Datt M., Foster D., Bennie L., Steenkamp C., Huyser J., Kirsten L., Steyl G., Roodt A., Rhodium hydride formation in the presence of a bulky monophosphite ligand: a spectroscopic and solid-state investigation, **Dalton Trans.**, 2005, 1108 – 1116.

Bennie L., Coetzee J., Malan E., Slade D., Marais J.P.J., Ferreira D., Trimeric proteracacinidins and a (6 → 6)-bis-leucoteracacinidin from Acacia galpinii and Acacia caffra, **Phytochemistry**, Vol. 65, Issue 2 (2004), 215 – 220.

POSTERS

Crause C., Bennie L., Damoense L., Dwyer C.L., Grove C., Grimmer N., Janse van Rensburg W., Kirk M.M., Mokheseng K.M., Otto S., Steynberg P.J., Bicyclic phosphines as ligands for cobalt-catalysed hydroformylation, **Dalton Trans.**, 2003, 2036 – 2042.

Bennie L., Coetzee J., Malan E., Ferreira D., (4→6)-Coupled proteracacinidins and promelacacinidins from Acacia galpinii and Acacia caffra, **Phytochemistry**, Vol. 60, Issue 5 (2002), 521 – 532.

Bennie L., Coetzee J., Malan E., Ferreira D., Structure and stereochemistry of dimeric proteracacinidins possessing the rare C-4(C)→C-5(D) interflavanyl linkage, **Phytochemistry**, Vol. 59, Issue 6 (2002), 673 – 678.

Bennie L., Coetzee J., Malan E., Ferreira D., Structure and stereochemistry of triflavanoids containing both ether and carbon-carbon interflavanyl bonds, **Phytochemistry**, Vol. 57, Issue 6 (2001), 1023 – 1034.

Bennie L., Coetzee J., Malan E., Woolfrey J.R., Ferreira D., Oligomeric flavanoids. Part 34: Doubly-linked proteracacinidin analogues from Acacia caffra and Acacia galpinii, **Tetrahedron**, Vol. 57, Issue 4 (2001), 661 – 667.

Bennie L., Coetzee J., Malan E., Ferreira D., Structure and synthesis of ether-linked proteracacinidin and promelacacinidin proanthocyanidins from Acacia caffra, **Phytochemistry**, Vol. 53, Issue 7 (2000), 785 – 793.

Solvent-free and solution based synthesis of *o*-hydroxy imines with non-planar molecular geometry, M. Zbačnik, L. Twigge, A. Roodt and D. Cinčić, 29th European Crystallographic Meeting, 23 – 28 August 2015, Rovinj, Croatia.

Structural study of Rh-acac complexes for use in oxidative addition, T. Taoana, L. Twigge and J. Venter, IYCr 2014 Africa, Bloemfontein, South Africa.

Magnetization Transfer Study on the Exchange Reaction of [Rh(N,O-Bid)(CO)(PPh_3)] Complexes with PPh3, A. Roodt, L. Twigge and T.J.S. Venter, SMASH 2013, Santiago de Compostela, Spain.

Quantitation of bicalutamide in human plasma by tandem liquid chromatography-mass spectrometry with electrospray ionization, L. Bennie, H.S. Kruger, K.J. Swart and M.J. van der Merwe, CHROMSAAMS 2008, Bela-Bela, South Africa.

Determination of spironolactone and its metabolites, canrenone and 7-alpha thiomethylspironolactone by HPLC coupled to electrospray tandem mass spectrometry, L. Bennie, H.S. Kruger, K.J. Swart, M.J. van der Merwe and L.C. van Jaarsveld, CHROMSAAMS 2008, Bela-Bela, South Africa.

REFERENCES

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