

Deon de Wet - Roos

- +27 (0) 76 792 2084
- ddewetroos@mweb.co.za
- Vereeniging, South Africa
- <https://za.linkedin.com/in/deon-de-wet-roos-092a451b3>

DD



I am an astute and results driven business executive. Experienced in Chemical & Polymer Synthesis, Chemical Engineering, Chemistry and Computer Science. I have a 34-year track record of Project Management, Leadership, People Development, Mentorship, Team Mobilisation & Strategy Execution. I've served in various Executive, Managerial and Strategic Project Development roles where I am responsible for developing and driving the Product & Content Strategy.

I am a self-starter who is goal-driven, dynamic and passionate with a high level of integrity in my dealings with people and business.

I am currently seeking a position within a well-established company where my skills will be of value as well as reach career advancement.

Positions:
Management Consulting

Personal

ID: 660927 5053 082

Passport No: M00063336

Citizenship: Republic of South Africa

Gender: Male

Transport: Own

Driver's License: Valid

Languages: English, Afrikaans, German
Dutch – Read

Availability: Immediately

Region: Johannesburg. Potchefstroom, Alberton

Relocate: Freestate, Western Cape, Nelspruit & Internationally

Experience

Product Development Manager Lignin (July 2018 – September 2021) - SAPPI
Consultant (August 2016 – 2018) – SAPPI
Industrial Chemistry Consultant - Current
Industrial Chemistry Consulting
August 2016 – Current

Duties:

Product Development Manager Lignin

- Gathers the raw materials necessary to build or create the product being developed.
- Performs research in order to determine the best way to produce a particular item.
- Prepares reports on the various procedures that have been tried in order to eliminate methods that are unsuccessful.
- Oversees product development amongst a team of individuals.
- Prepares a cost analysis on the development of a new product.
- Creates marketing campaigns designed to inform people about new product availability.
- Research patents, copyrights and trademarks in order to make sure there are no infringement issues involved.
- Ensures that every phase of a particular project proceeds as scheduled.
- Makes adjustments to a development plan whenever the current idea is not working well.

Focused on specific areas of application:

- Phenolic Resins
- Resols
- Novalacs
- Polyurethane Foams
- Polyols
- Polyesters
- Other Areas
- Surfactants
- Lubricants
- Soil Stabilizers
- Other raw materials used:
- Sugar / formaldehyde resins
- Starch / glycerol polyols

Notable achievements:

- Economic evaluation of projects – as goal function maximize profit as well as quality which means an optimization in terms of quality and cost.

Education

Higher Certificate in Microbiology

Vaal Triangle Technikon
1985 – 1986

BSc in Chemistry and Computer Science

Potchefstroom University for Christian Higher Education
1987 – 1989

BSc Honours - Chemistry

Potchefstroom
1990 – 1991

MSc - Polymer Science, Cum Laude

Stellenbosch University
1992 – 1994

MSc Title: "Neutral Polymeric Bonding Agents. Synthesis and Characterization"

PhD - Polymer Science

Stellenbosch University
1994 – 1998

PhD Title: "The Mechanism of Polymerization of an Epoxy-Acrylate Composite Emulsion"

Postgraduate Diploma in Business Administration

Heriot-Watt University
2005 – 2007

MBA

Heriot-Watt University
2012

Experience

- Cost has been kept very low to remain below half of phenol price. Quality has been acceptable.
- In terms of plywood resins – scale up from lab to production. In total about 10 tons. Both roller applied and spray applied resin systems developed.
- Issues pertaining to high inorganics of lignosulfonate stream addressed – precipitation and means to increase molecular mass of lignosulfonate.

Consultant:

- Worked on issues involving high insoluble in sodium lignosulfonate side stream at Tugela mill. Did several types of Lignin testing including lignosulfonate, soda lignin, pre-hydrolysate lignin.
- Recommended a number of different treatments to chemically modify the lignin to reduce process variation which was the main reason for high insoluble content.
- A hundred-page report was compiled with suggestions that are used currently in further lignin valorization work.

R&D Manager

SI Group South Africa

August 2013 – August 2016

Duties:

- Manage development work in conjunction with business managers with regard to:
 - Plywood adhesives based on phenol, alkyl phenols and formaldehyde (Resoles)
 - Foundry resins and hardeners – based on phenol, furan and formaldehyde
 - Industrial resins based on phenol formaldehyde (Novolacs)
 - Polyurethanes – adjacent technology based on phenol formaldehyde resins
- New product development.
 - New types of plywood adhesives with increased shelf life and based on renewable raw materials.
 - New types of novolac powders used in friction applications based on nano-additives
 - New polyurethane applications in rigid foams for prefabricated housing
 - Optimization of processes to manufacture products.
- Assist production.
- Implement and manage safety, health and environmental policies applicable to R&D.
- Implement project management as a tool to manage a large number of diverse projects.
- Manage government incentives for research and development as well as enterprise development.
- Manage a staff complement of 5 people including KPAs and staff development.
- Interact globally with R&D in the USA and Europe on specific projects.
- Managed to procure at least US\$ 1.1 m in 2015 in new product sales.

Technical Manager

Lake International Technologies

August 2011 – July 2013

Duties:

- Manage development work in conjunction with business managers with regard to:
 - Emulsifiers for mining explosives.
 - Fertilizer coatings for nutrient attachment.
 - Naturally derived anti-caking and anti-dust coatings.
 - Crystal growth modifiers.
 - Industrial surfactants and chemicals.
 - Defoamers and dispersants.
 - Polyurethanes – elastomers, rigid foam applications, adhesives and flexibles.
- New product development.
 - New types of emulsifiers and additives using controlled free radical polymerization.
 - New types of fertilizer coatings – slow release.
 - New polyurethane applications using naturally derived raw materials and recycled raw materials.
 - Optimization of processes to manufacture products.
- Assist production plant.



DD

Education

Courses and Certificates:

Attended a course on Millennium Software for GPCV

WATERS Corp. at Milford USA
2002

Basic Chemical Engineering Course

2003

Project Coordination Certificate

SASOL
2005

Hazard Identification and Operations course

2006

Petrochemical Markets and Economics – The Impact of Feedstocks and Costs on Competitiveness and Business Strategy

2007

Advanced Catalysis for Polypropylene and Polyethylene.

2008

Advanced Polymer Characterization

2008

Advanced Design of Experiments and Optimization using gradient technique

2008

Professional Certificate in Chemical Engineering and Plant Design

2017

Professional Certificate in Data Science with Python

University of Cape Town
2019

Financial Modelling and Valuation Analyst

CFI
2021

Experience

- Implement and manage ISO 9001/2008 quality program.
- Implement and manage safety, health and environmental policies (16.2 appointee).
- Implement project management as a tool to manage a large number of diverse projects.
- Manage Section 11 d and other government incentives for research and development as well as enterprise development.
- Manage a staff complement of 14 people including KPAs and staff development.
- Manage an R&D budget of R 8000 000 per annum.

Achievements:

- A patent application for fertilizer coatings – advanced design based on chemical nature of fertilizer granules.
- Successful introduction of improved emulsifier that directly impacted on the profitability of the business unit with turnover of R 500 000 000 per year (US\$ 50 000 000).
- Re-design of Biofix technology – direct impact on the profitability of the business unit.
- Development of slow release technology for urea.
- Development of polyols for polyurethanes from renewable resources.
- Participated in the implementation of a new business model for the polyurethane business unit.
- Successfully upgraded and upskilled the laboratories and personnel.

Technical Manager

FerroSA

September 2010 – July 2011

Duties:

- Direct Quality Control Management and Tinting Management including capturing and using ISO 9001 quality controls for continuous improvement.
- Implement cost saving measures in terms of cleaning extruders and optimizing coating formulations using experimental design.
- Evaluate new powder coating resins.
- Manage a staff complement of 12 people.

Senior Researcher (Contract basis)

Dept. of Process Engineering, University of Stellenbosch

August 2009 – June 2010

Polymerization Researcher

Borealis Linz, Austria

April 2008 - July 2009

Chief Scientist

SASOL Technology, a division of SASOL Ltd

November 2001 - April 2008

Achievements:

- Two world patents and three international publications on my research work.
- Reached the level of Chief Scientist.
- Initiated a number of innovative projects to design new products from the raw materials of SASOL including a new way of making Superabsorbent polymers.

Basic Research Manager

Plascon Paints Research Centre

April 1998 - October 2001

Achievements:

- One world patent on a special paint additive for Plascon that resulted in considerable cost reduction and new product development.
- Employee of the year award in 1999.
- Co-study leader for three MSc projects and external examiner for an additional three.



DD

Key Management Skills

- Analytic Thinking
- Budget Management
- Business Consulting
- Business Management
- Business Strategy
- Change Management
- Chemical & Polymer Synthesis
- Chemical Engineering
- Coaching Skills
- Communication Skills
- Computer Literate
- Continuous Improvement
- Contract Management
- Corporate Governance
- Customer Service
- Data Analysis
- Economic Evaluation
- Financial Modelling & Valuation Analyst
- General Management
- Health and Safety
- Implementation Management
- Interpersonal Skills
- ISO 9001
- KPAs
- Leadership skills
- Mathematical Modelling
- Performance Management
- Petrochemical Markets & Economics
- Plant Management
- Polymer Characterization
- Problem-solving
- Process Improvement
- Product Development
- Project Management
- Quality Management
- Relationship Building
- Report Writing
- Research Management
- Risk Management
- Staff Management
- Strategic Planning
- Technology Management
- Time Management
- Training and Facilitating Skills
- Troubleshooting

Awards and Expertise

Awards:

- Cum Laude MSc – University of Stellenbosch
- First prize in Innocentive.com:
- 2006: R 100 000 prize money for designing and writing a program that models the slow release of flavors from plastic matrices.
- 2010: R 70 000 prize money for designing a system based on Nano-Technology to indicate the presence of pathogens in confined spaces such as aircraft cabins.

Expertise:

- General management including setting KPI's, career development of staff, site management, budget control and general administrative duties.
- Manage and execute large scale technical projects safely involving a diversity of people and concurrent timelines.
- Economic and financial analysis of projects using instruments such as the Stage gate model, NPV, IRR, ROI and risk matrices.
- Assist and contribute to new business development and strategic positioning of the technical arm of a business.

Hands on experience in the following fields:

- Polymer synthesis and characterization including:
- Polyolefins, mostly LLDPE, HDPE, VLDPE, PP
- Acrylics including emulsion polymers, solvent-based polymers and specialty polymers.
- Condensation polymers including polyesters, novolacs and resoles.
- Polyurethanes.
- Industrial resins such as novolacs and resols.

Chemical synthesis including:

- Organometallic synthesis.
- Surfactant design and synthesis

Formulation science including:

- Defoamer formulations.
- Decorative coating formulations
- Powder coating formulations
- Polyurethane foams and elastomers.
- Industrial resin formulations for brake pads, abrasive applications, paper impregnation, plywood adhesive formulations and foundry- coating and adhesive formulations.

Technical Skills:

- MS Excel
- MS Word
- MS Outlook
- MS PowerPoint
- Internet
- Email
- Matlab
- Python
- Pascal
- Visual Basic for Applications (VBA)

References

Available on request



DD

International Publications, Posters and Presentations

Publications:

- "Emulsion Polymerization of an Epoxy-Acrylate Emulsion Stabilized with Polyacrylate. I. Influence of Salt, Initiator, Neutralizing Amine, and Stirring Speed." Journal of Applied Polymer Science, D. De Wet-Roos, J. H. Knoetze, B. Cooray, R. D. Sanderson, Vol. 71, 1347-1360, (1999)
- "Emulsion Polymerization of an Epoxy-Acrylate Emulsion Stabilized with Polyacrylate. II. Using the results from statistically designed experiments to deduce a Possible Mechanism of Polymerization." D. De Wet-Roos, J. H. Knoetze, B. Cooray, R. D. Sanderson, Journal of Applied Polymer Science, Vol. 76, p. 368 – 381, (2000).
- "The effect of Reducing Monosaccharides on the Atom Transfer Radical Polymerization of Butyl Methacrylate", Andrew de Vries, Bert Klumperman, Deon de Wet-Roos, Ron D. Sanderson, Macromolecular Chemistry and Physics, Vol. 202, pp. 1645 - 1648, (2001)
- "Controlled Free Radical Polymerization in Water-borne Dispersion Using Reversible Addition-Fragmentation Chain Transfer (RAFT)", J. B. McLeary, M. P. Tonge, D. de Wet Roos, R. D. Sanderson, B. Klumperman, Macromolecules, 2002
- "Characterization and rheological properties of model alkali-soluble rheology modifiers synthesized by reversible addition-fragmentation chain transfer polymerization", E. Sprong, D. De Wet-Roos, M. P. Tonge, R. D. Sanderson, Journal of Polymer Science: Part A: Polymer Chemistry, Vol. 41, 223-235, (2003)
- "Core/shell particles containing liquid cores: Morphology prediction, synthesis, and characterization", Macromolecules, André J. P. van Zyl, Ronald D. Sanderson, Deon de WetRoos, and Bert Klumperman, Macromolecules, 2003, 36 (23), pp 8621–8629
- "Controlled, Radical Reversible Addition-Fragmentation Chain-Transfer Polymerization in High Surfactant-Concentration Ionic Miniemulsions", Journal of Polymer Science: Part A: Polymer Chemistry, MCLEARY J. B; TONGE M. P; DE WET ROOS D; SANDERSON R. D; KLUMPERMAN B, Vol. 42, pp. 960 - 974, (2004)
- "Solution and Latex Properties of Model Alkali-Soluble Rheology Modifiers, Synthesized via the Reversible Addition-Fragmentation Chain Transfer Process, and the Effects of the Ethylene Oxide Chain Length on the Rheological Properties", Ewan Sprong, Deon De Wet-Roos, Matthew Tonge, Ron Sanderson, Journal of Polymer Science: Part B: Polymer Physics, Vol. 42, pp. 2502-2512, (2004)
- "The role of surfactant in controlling particle size and stability in the miniemulsion polymerization of polymeric nanocapsules", European Polymer Journal, VAN ZYL André J. P; DE WETROOS Deon; SANDERSON Ronald D; KLUMPERMAN Bert, Vol. 40, pp. 2717-2725, (2004)
- "Homogeneous Tandem Catalysis of Bis(2-decylthioethyl) amine-Chromium Trimerization Catalyst in Combination with Metallocene Catalysts", Macromolecules, DE WET-ROOS Deon; DIXON John Thomas, Vol. 37, pp. 9314-9320, (2004).
- "Homogeneous Tandem Catalysis of the bis(diphenylphosphino)-Amine/Chromium Tetramerization Catalyst with Metallocene Catalysts", Journal of Polymer Science: Part A: Polymer Chemistry, Deon De Wet-Roos, Aletta DU Toit, Dawie J. Joubert, Vol. 44, pp. 6847-6856, (2006)
- "Styrene-ethylene co-oligomerization with bis-(diphenylphosphino)-amine/chromium catalysts and the use of the co-oligomerization products in copolymerization reactions with metallocenes" Journal of Polymer Science: Part A: Polymer Chemistry, Aletta Du Toit, Deon De Wet-Roos, Dawie J. Joubert, Albert J. Van Reenen, Vol. 46, pp. 1488-1501, (2008)
- "Modeling composite emulsion polymerization kinetics", D. de Wet-Roos, J.H. Knoetze, International Journal of Chemical Kinetics, Vol. 45, Issue 2, pp. 101 – 117, 2013

Posters:

- Presented a poster at the UNESCO conference on macromolecules held at Stellenbosch during March 2000 entitled: "The Mechanism of Polymerization in an Epoxy-Acrylate Composite Emulsion"
- Co-presented posters at the 3rd IUPAC sponsored International Symposium on Free Radical Polymerization: Kinetics and Mechanism. The following were presented:
 - "The synthesis of Model Alkali-Soluble Thickeners (AST's) by means of Reversible Addition Fragmentation Chain Transfer (RAFT) Polymerization and their rheological Behavior" E. Sprong, R.D. Sanderson, D.de Wet – Roos
 - "A comparative study of Reversible Addition-Fragmentation Transfer agents in aqueous media" J. McLeary, D. de Wet – Roos, R.D. Sanderson, B. Klumperman
 - "The seeded polymerization of styrene and butyl acrylate in the presence of alkyl halides as degenerative chain transfer agents" C. Beyers, D. de Wet – Roos, R. Sanderson
 - "Morphology prediction, synthesis and Characterization of Core/Shell Particles Containing Liquid Cores" A.J.P. van Zyl, R.D. Sanderson, D. de Wet – Roos, B. Klumperman
- ACS Symposium, New Orleans, 2003
 - RAFT in heterogeneous aqueous media, J.B. McLeary, D De Wet-Roos, M.P. Tonge , R. Sanderson , L. Klumperman
 - Synthesis of liquid-filled polymeric nanocapsules: Morphology analysis, role of surfactant and the use of living polymerization techniques, André J.P. van Zyl, Deon de Wet-Roos, Ronald D. Sanderson, Bert Klumperman
- ECOREP III (2005) Conference in Lyon France, delivered a presentation on Tandem Catalysis.
- Blue Sky Conference in Sorrento, Italy, 2005 – Poster on Tandem Catalysis

Patents:

- John Francis Engelbrecht, Boyd Cooray, Deon de Wet - Roos, Albertus Smit, Johannes H. Knoetze, Vesiculated Polymer Particles, WO/2004/029116
- Tandem Tetramerization-Polymerization of Olefin, BLANN, Kevin. DIXON, John, Thomas, DE WET-ROOS, Deon, WO/2004/056480A1
- Polymerization of Olefinic Compounds, Blann, Kevin; De Wet-Roos, Deon; Joubert, Dawid Johannes; Killian, Esna; Dixon, John Thomas; Phelembe, Nonhlanhla Jillian; Du Toit, Aletta, US Patent 7285607