



NOTES

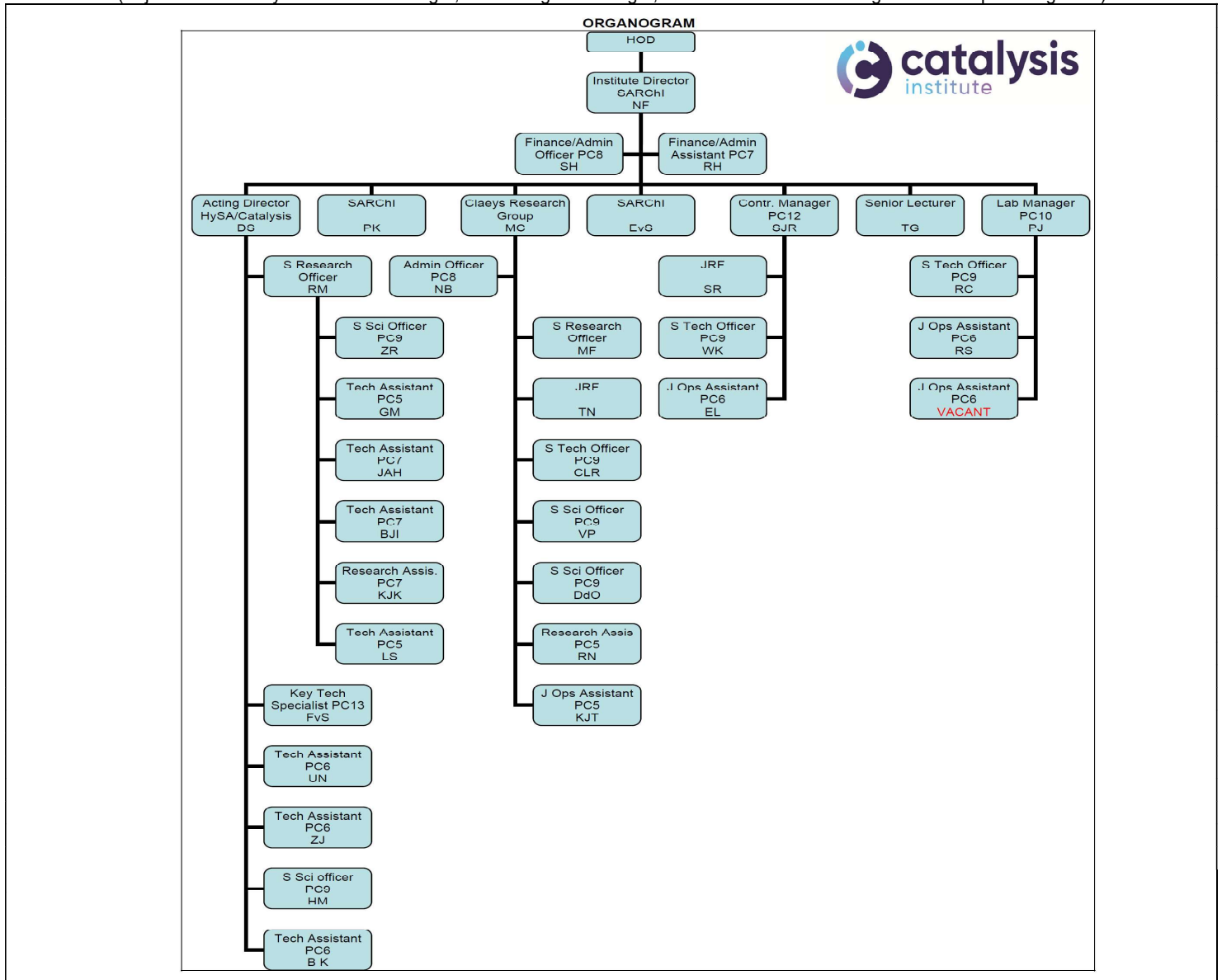
- Forms must be downloaded from the UCT website: <http://forms.uct.ac.za/forms.htm>
- This form serves as a template for the writing of position descriptions.
- A copy of this form is kept by the line manager and the position holder.

POSITION DETAILS

Position title	Key Technology Specialist – MEA		
Job title (HR Business Partner to provide)			
Position grade (if known)	PC13PG5	Date last graded (if known)	Before 2019
Academic faculty / PASS department	EBE		
Academic department / PASS unit	CHEMICAL ENGINEERING		
Division / section	HySA/Catalysis Centre of Competence		
Date of compilation	Oct 01 2024		

ORGANOGRAM

(Adjust as necessary. Include line manager, line manager's manager, all subordinates and colleagues. Include position grades)



PURPOSE

The main purpose of this position is:

The Key Technology Specialist will lead the HySA Catalysis Membrane Electrode Assembly (MEA) and catalyst development activities. The MEA and catalyst are Centre's core technologies. The individual will be based in Cape Town on a 3-5 year contract at the University of Cape Town campus. He/she will lead the technology development team to design and deliver MEAs based on HySA catalysis customer requirements. The individual will develop relationships and engage with industrial partners and various stakeholders.

Key responsibilities:

- Lead the MEA and catalyst research and technology development team to develop novel commercially viable products incorporating intellectual property generated by the team.
- Establish and lead the customized MEA development and scale-up to TRL 6 activities.
- Engage with industry and customers to understand market requirements and technical specifications and transfer these into technology development programmes and work plans.
- Integrate advanced technologies from R&D team into future MEA products.
- Develop comprehensive local competence with a view to contribute to and support domestic manufacturing in South Africa.
- Transfer internationally and locally recognized knowledge, skills and expertise to HySA Community.
- Assist with the business planning, the budgeting process and technical reporting requirements of all MEA projects.

The Key Technology Specialist: MEA will be based at the Chemical Engineering Department of the University of Cape Town and report directly to the Research and Technology Development Manager for Fuel Cells and Electrolysers.

CONTENT

Key performance areas	% of time spent	Inputs (Responsibilities / activities / processes/ methods used)	Outputs (Expected results)
E.g. General and office administration	25%	<p>Takes, types up and distributes minutes and agendas for monthly departmental meeting.</p> <p>Greets visitors, enquires as to the nature of their visit and directs them to the appropriate staff member.</p>	<p>All staff members receive an electronic copy of accurate minutes and agendas, in the departmental template/format, a week before the meeting.</p> <p>Visitors are directed to appropriate staff member in a professional and efficient manner.</p>
1 Resource management: People	20	<p>Leadership of fuel cell membrane electrode assembly (MEA) and catalyst technology development team.</p> <p>Discussing and agreeing on job objectives and Key Performance Areas with direct reportees.</p> <p>Undertaking performance management and assessment of direct reportees.</p> <p>Coaching and mentoring staff as needed and appropriate by sharing technical and research knowledge, skills/tips.</p> <p>Creating the platform to discuss and deal with operational day-to-day activities.</p> <p>Compliance to health and safety legislation and regulations.</p>	<p>Team (staff and students) understand their roles, responsibilities and objectives.</p> <p>Direct staff performance assessed regularly and feedback provided. Staff development opportunities provided.</p> <p>Technology development team is optimally staffed and resourced.</p> <p>Staff performs at the level expected and produce outputs that support strategic goals of HySA Catalysis. Innovation is encouraged.</p> <p>Fuel cell MEA and catalyst team follows laboratory safety protocols and regulations.</p>

2	Technology Development and Scale-up activities to TRL 6	50	<p>Provide commercially relevant technical leadership to the fuel cell research and technology development team in areas of catalysts and MEAs (TRL 1-6), and prototype stacks (LTPEM FC only, TRL 1-6).</p> <p>Create research and technology plans for fuel cell catalysts and MEAs in accordance with HySA Catalysis mandates.</p> <p>Encourage and implement innovation in fuel cell catalyst and MEA technology development (TRL 1-6).</p> <p>Establish scalable MEA technology and procedures and work with stakeholders and local industry to establish/maintain scale-up of MEA process to TRL 6.</p> <p>Assist in Human Capital Development (MSc and PhD students) with co-supervision of research (TRL 1-3) projects.</p> <p>Drafting proposals and making recommendations for the achievement of fuel cell research and technology development objectives.</p> <p>Benchmarking fuel cell MEA and catalyst technology against competitors locally and internationally.</p> <p>Keeping abreast of changes and maintaining a detailed understanding of fuel cell technology and related projects and trends. This could be through reading literature, research and attendance/participation at local and international conferences and workshops, membership of national and international bodies and incorporate some of these into fuel cell HySA Catalysis fuel cell strategies.</p> <p>Assist to Research and Technology Development (R&TD) Manager/Director in achieving HySA Catalysis' and UCT goals and objectives.</p> <p>Assist to R&TD Manager/Director in search for external funding for fuel cell related projects.</p>	<p>State-of-art MEA product able to meet customers specifications and set targets.</p> <p>Scalable MEA preparation processes.</p> <p>Creation of innovation pipeline for continually improving MEA and catalyst technology.</p> <p>Catalysts and MEAs benchmarked.</p> <p>Catalyst development and scale-up to pre-commercial quantities (e.g. 50g)</p> <p>Human Capital Development and knowledge transfer: staff and students trained. Includes co-supervision of MSc and PhD students.</p> <p>Oral and written communication for fuel cell projects: vision, planning, proposals and progress of the team (technology development activities).</p> <p>Publications in peer reviewed academic journals</p> <p>Intellectual property registrations.</p> <p>Presentations at international and national conferences.</p>
---	---	----	--	--

3	Industry, customer and stakeholder engagement	20	<p>Engage with industry partners to understand MEA application requirements and translate these into technology development roadmaps.</p> <p>Engage with HyPlat to support their needs for research/technology development projects.</p> <p>Participation in and support of joint projects with HySA Systems and Infrastructure (if required).</p> <p>Exploring ways of building, maintaining and nurturing strategic relationships and partnerships to expand UCT's fuel cell research efforts.</p> <p>Implementing effective links with reputable institutions and service providers for advancement of fuel cell technology.</p> <p>Establishing, managing and maintaining supply chain relationships.</p>	<p>Technology development roadmaps and work plans for technology development team.</p> <p>HyPlat's projects supported as per their initiative and request.</p> <p>New MEA customer relationships.</p> <p>Strategic links, relationships and partnerships for fuel cell projects are built and nurtured.</p>
4	Business planning, budgeting and reporting	10	<p>Assist to HySA/Catalysis R&TD Manager and/or Director with business planning, budgeting process and technical reporting requirements of all MEA and catalyst projects.</p> <p>Leading and managing contract negotiations and memorandum of understanding (MOU) for fuel cell related projects</p> <p>Ensure that the technical reporting requirements of all fuel cell MEA and catalyst projects are met.</p>	<p>Resources available and used appropriately.</p> <p>Budgets and forecasts for fuel cell MEA and catalyst activities prepared and submitted as required.</p> <p>High quality technical reports and presentations prepared and delivered (e.g quarterly, mid-year and annually) to HySA/Catalysis R&TD Manager and/or Director.</p>
5				

MINIMUM REQUIREMENTS

Minimum qualifications	MSc Eng or higher in Engineering or Science discipline			
Minimum experience (type and years)	5+ years of relevant fuel cell industrial experience specifically in MEA and fuel cell development			
Skills	Communication, project management skills, technical knowledge skills			
Knowledge	Fuel cells (catalyst, membrane electrode assembly and sub-components, fuel cell stack design), technical knowledge and skills in area of electrochemistry and catalysis.			
Professional registration or license requirements	N/A			
Other requirements (If the position requires the handling of cash or finances, other requirements must include 'Ability to handle cash or finances'.)	Ability to handle cash or finances. Resource management. Project delivery on time and within budget.			
Competencies (Refer to UCT Competency Framework)	Competence	Level	Competence	Level
	Analytical thinking and problem solving	3	Teamwork/collaboration skills	3
	Planning and organizing/work management	3	University awareness skills	3
	Professional knowledge and skills	3	Communication skills	3
	Research support skills	3	Building interpersonal relationships	3

SCOPE OF RESPONSIBILITY

Functions responsible for	Leadership of the MEA technology development team to develop novel commercially viable products incorporating intellectual property generated by the team. Establishing and leading the customized MEA development and scale-up to TRL 6 activities. Engagement with industry and customers to understand market requirements and technical specifications and transfer these into technology development programmes and work plans. Integration of advanced technologies from R&D team into future MEA products. Development of comprehensive local competence with a view to contribute to and support domestic manufacturing in South Africa. Transferring of internationally and locally recognized knowledge, skills and expertise to HySA Community. Assisting with the business planning, the budgeting process and technical reporting requirements of all MEA projects.
Amount and kind of supervision received	Expected to work independently in cooperation with Research and technology Development Manager for Fuel Cells and Electrolysers.
Amount and kind of supervision exercised	Will contribute to supervision of a technology development team.
Decisions which can be made	Technical decisions relevant for MEA development and scale-up. Decisions related to customer engagements, project scoping, project management and execution within allowed budget and time frame.
Decisions which must be referred	Financial decisions that are outside of allowed project budget. Any changes to the already established project scope, management and execution must be first discussed with Research and Technology Development Manager for Fuel Cells and Electrolysers.

CONTACTS AND RELATIONSHIPS

Internal to UCT	
External to UCT	

AGREED BY

	PRINT NAME	SIGNATURE	CONTACT NO.	DATE
Position Holder	Francois van Schalkwyk	<i>CFvanSchalkwyk</i>	082 220 1428	2024.10.01
Direct Line Manager/Supervisor	Darija Susac	<i>Susac Darija</i>	0723735350	2024.10.01