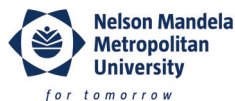


TECHNOLOGY STATIONS PROGRAMME

A network of Technology Stations hosted at Higher Education Institutions in South Africa



Higher Education Institutions affiliated with the Technology Stations Programme



CONTENTS

TECHNOLOGY STATIONS PROGRAMME	2
OPERATIONAL OBJECTIVES	3
SERVICES OFFERED	4
PROCEDURE TO FOLLOW TO ACCESS TECHNOLOGY STATION SERVICES	6
TECHNOLOGY STATIONS:	7
Technology Station in Electronics (TSE) - Tshwane University of Technology	8
Metal Casting Technology Station (MCTS) - University of Johannesburg	10
Technology Station for Materials & Processing Technology (TSPMT) - Vaal University of Technology	12
Product Development Technology Station (PDTS) - Central University of Technology	14
eNTSA - Nelson Mandela Metropolitan University	16
InnoVenton: Institute for Chemical Technology - Nelson Mandela Metropolitan University	18
Technology Station in Clothing and Textile (TSCT) - Cape Peninsula University of Technology	20
Agrifood Technology Station (ATS) - Cape Peninsula University of Technology	22
Limpopo Agro-Food Technology Station (LATS) - University of Limpopo	24
Technology Station in Chemicals (TSC) - Tshwane University of Technology	26
Technology Station in Chemicals (TSC) - Mangosuthu University of Technology	28
Reinforced and Moulded Plastics Technology Station (RMPTS) - Durban University of Technology	30
Institutes of Advanced Tooling (IAT's)	32
Institute for Advanced Tooling - Tshwane University of Technology (IAT-TUT)	34
Institute for Advanced Tooling - Walter Sisulu University (IAT-WSU)	36
Institute for Advanced Tooling - Stellenbosch University (IAT-SU)	38
Adaptronics Advanced Manufacturing Technology Laboratory (AMTL) - Cape Peninsula University of Technology	40
Process Energy and Environmental Technology Station (PEET) - University of Johannesburg	42
Technology Station in Rural Sustainable Development (TSRSD) - Upington in the Northern Cape, affiliated to VUT	44

TECHNOLOGY STATIONS PROGRAMME

The Technology Stations Programme (TSP) was established to enable Universities of Technology (UoT) to provide technology development services to small and medium enterprises (SMEs). The Technology Stations (TSs) provide innovative Science, Engineering and Technology (SET) solutions for complex engineering challenges within the relevant industrial sectors aimed at supporting government's socio-economic priorities.

There are 18 Technology Stations (TS) based at 11 Higher Education Institutions in South Africa, managed by the Technology Stations Programme (TSP) Unit based in Pretoria at the Technology Innovation Agency (TIA) office. The TSP is a management and systems-wide support unit responsible for all Technology Stations across the country. The mission of the TSP is to assist the Technology Stations and Higher Education Institutions (HEIs) in the core, by performing the following functions:

- a) Ensure that funds allocated to the TSP have impact and are aligned with the TIA/DST national strategic objectives and performance measures;*
- b) Reduce transaction and co-ordination costs of activities that involve or benefit multiple TSs to promote synergies and network benefits;*
- c) Monitor and evaluate the performance of TSs SME-related projects, and initiate interventions where required;*
- d) Identify opportunities to upgrade and/or expand the TSs high-end technology infrastructure;*
- e) Facilitate opportunities for technology knowledge transfer and innovation support to TIA's stakeholders; and*
- f) Promote the network of Technology Stations to other government programmes and ensure that the TSs are aware of and participating in related national priorities and industry programmes.*

The Technology Stations are well positioned to support industry, particularly SMEs and Higher Education Institutions. The Technology Stations' activities offer an opportunity to bridge the gap between local suppliers and industry to take advantage of the recapitalization and expansion programmes by enhancing competitiveness of local suppliers through technology improvement. The TS provide technology transfer infrastructure that plays a critical role for transferring technologies from Higher Education Institutions to technology users.

The Department of Science and Technology (DST) provides financial support through TIA, to Higher Education Institutions (HEIs) which house Technology Stations to provide technical support to SMEs in terms of solutions for services and training.

OPERATIONAL OBJECTIVES

The TSP has contributed towards the achievement of the DST and national objectives relating to technology innovation, enabling and support. The TSP network in FY2015/16 offered sophisticated and effective technological solutions to more than 2 000 enterprises and individuals in targeted communities. The TSP has also directly contributed to the DST knowledge-based indicators by becoming a critical enabler for thirteen (13) prototypes and technology transfer packages onto the regional innovation system with HEIs.

The core goal of the TSP is to contribute towards improving the competitiveness of industry through the application of specialised knowledge and technology; and facilitating the interaction between industry (especially SMEs) and academia in order to enable innovation

Objectives	Contribute to HEI being more responsive to the needs of industry	Enable industry, SMEs in particular, to benefit from the specialised knowledge and innovative technologies of the universities
KPA	Institutional learning and development	Technology transfer and industry support
Measures	Knowledge products supported, Post graduate studies and students on projects, Equipment of TS used by host, Collaboration with other TS, Contribution to academic content & by host to TS, Interns hosted	Technology based support & training to SMEs, Tech based products/processes developed or improved (projects), Industry relevant services, TS equipment used by industry, Industry uptake of technology, Financial contribution to TS from industry/public sources, Provision of industry relevant training

Socio-Economic Impact

SERVICES OFFERED

Technology Services management and support systems have been developed that will incorporate knowledge management based applications in the near future. The support system has enhanced the efficiency the TS to give technology based services to Entrepreneurs, SME's, large corporations and relevant industrial sectors.

The following is a list of products and services offered by the Technology Stations:



TESTING AND ANALYTICAL SERVICES

Testing and Analytical Services include material testing and behavior analysis, as well as quality tests. These can be R&D or routine jobs according to existing standards or client's specifications, using readily available high-end software and equipment.



RAPID PROTOTYPING AND MANUFACTURING

This involves producing a working model with regard to the indicated functional aspects of a product. The manufacturing is not limited to batch/pilot manufacturing of models, but can include either contract machining or manufacturing, based on the client's drawings or specifications.



CONSULTATION, TECHNOLOGY AUDIT AND FEASIBILITY STUDY

Consultation includes search and technology brokerage services, finding the know-how as a diagnostic service, assessment or consultancy. This is usually the first part of any project to identify the potential for improvement and the required interventions. This involves the searching and sourcing of technology from outside the Universities of Technology, generally from firms, engineering consultants; brokering as well as possibly managing technology transfers to SME's.



PROCESS OR PRODUCT IMPROVEMENT

Productivity, workflow and quality all improve production facilities and products by applying standard procedures and methods. In many cases, this would also involve testing and analytical services to make the product conform to required specifications on new market demands and regulations.



APPLIED DEVELOPMENT, ENGINEERING AND DESIGN

This involves the application of engineering processes from CAD to CAM now CAE, including scaled production based on the know-how from Technology Stations, needing professional engineering and design skills as well as identification and sourcing of technology or equipment. These services lead to demand driven projects that can be funded by various funding Agencies.



RESEARCH AND DEVELOPMENT

This refers to the R&D conducted on behalf of SME's to investigate new products or processes which are beyond the existing state of the art; applying scientific methods to improve competitiveness and compliance to prescribed standards. Some of the categories of R&D are initiated from within the University of Technology with the intention to market them at a later stage.



TECHNOLOGY DEMONSTRATION AND TRAINING

The demonstration of technology focuses on the introduction of SMEs to new products or to improve existing technologies related to their respective projects. Tailor-made training and demonstrations can be to a number of SME's or Individuals. Technology Demonstration and Training is also aligned to formal accredited University Training activities.

PROCEDURE TO FOLLOW TO ACCESS TECHNOLOGY STATION SERVICES

1. *Fill out a Client Capturing Form (CCF) – Must be completely filled and signed with the Company registration number.*
2. *For start-up companies not registered with the Companies and Intellectual Property Commission (CIPC), an Identity Document (ID) Copy of one of the members should be submitted.*
3. *Copy of ID (if the client is an individual without a registered company) should be submitted.*
4. *Clients under the age of 18 are to be accompanied by a guardian or school teacher when using any services at the TS.*
5. *For large groups (I.e. schools or organisations) the entity representative will need to sign a CCF.*

TECHNOLOGY STATIONS

<i>Technology Station in Electronics (TSE) - Tshwane University of Technology</i>	8
<i>Metal Casting Technology Station (MCTS) - University of Johannesburg</i>	10
<i>Technology Station for Materials & Processing Technology (TSPMT) - Vaal University of Technology</i>	12
<i>Product Development Technology Station (PDTS) - Central University of Technology</i>	14
<i>eNTSA - Nelson Mandela Metropolitan University</i>	16
<i>InnoVenton: Institute for Chemical Technology - Nelson Mandela Metropolitan University</i>	18
<i>Technology Station in Clothing and Textile (TSCT) - Cape Peninsula University of Technology</i>	20
<i>Agrifood Technology Station (ATS) - Cape Peninsula University of Technology</i>	22
<i>Limpopo Agro-Food Technology Station (LATS) - University of Limpopo</i>	24
<i>Technology Station in Chemicals (TSC) - Tshwane University of Technology</i>	26
<i>Technology Station in Chemicals (TSC) - Mangosuthu University of Technology</i>	28
<i>Reinforced and Moulded Plastics Technology Station (RMPTS) - Durban University of Technology</i>	30
<i>Institutes of Advanced Tooling (IAT's)</i>	32
<i>Institute for Advanced Tooling - Tshwane University of Technology (IAT-TUT)</i>	34
<i>Institute for Advanced Tooling - Walter Sisulu University (IAT-WSU)</i>	36
<i>Institute for Advanced Tooling - Stellenbosch University (IAT-SU)</i>	38
<i>Adaptronics Advanced Manufacturing Technology Laboratory (AMTL) - Cape Peninsula University of Technology</i>	40
<i>Process Energy and Environmental Technology Station (PEET) - University of Johannesburg</i>	42
<i>Technology Station in Rural Sustainable Development (TSRSD) - Upington in the Northern Cape, affiliated to VUT</i>	44

TECHNOLOGY STATION IN ELECTRONICS (TSE)

The Technology Station in Electronics (TSE) is situated at the Tshwane University of Technology (TUT), operates in the Electronic, Electrical and information and communication technology industries. The TSE collaborates with various academic departments within the Faculty of Engineering and the Built Environment to fulfil its mandate.

The Technology Station is primarily a technology platform where clients can come for expert advice, product development and low volume manufacturing services. In 2004 TSE implemented a state of the art electronic manufacturing platform that allowed the TS to assemble electronic products for small business clients who were unable to wait for long periods of time or who weren't satisfied with quality levels of their current manufacturers.

This was later expanded to include a team consisting of a number of electronics, mechatronics, industrial and mechanical specialists who are able to take a new concept a client might have and design the product the way the client envisioned. This allowed the Station to not only design products, but to be able to also manufacture the products in small quantities to allow clients' businesses to grow and enter new markets with their products. Today the Station performs a wide variety of services that target a number of sectors in mining, automotive, rail, military, energy, etc

TECHNOLOGY COMPETENCIES AND OFFERINGS

Development expertise include, but are not limited to:

- 8/16/32 Bit Microcontroller Technologies
- PGA Design
- GPS Technologies
- GSM Technologies
- Wireless Transceiver Technologies
- Various Sensor and Actuator Technologies

Electronic Development

Needs analysis and specification development

Schematic development

Printed circuit board design

Prototyping and testing

Existing product line improvement

Electronic Development Services (EDS)

The main focus of the EDS is on innovation through design, prototyping and development of electronic hardware, which includes the design and development of new products from initial concept to production readiness.

Electronic Manufacturing

Low volume manufacturing

Prototyping (once-off build)

Electronic Manufacturing Services

The TSE utilises state of the art equipment to manufacture high quality and reliable products for clients using several manufacturing processes and technologies. The Electronic Manufacturing Services (EMS) is executed by experienced and trained staff.

Training

Short Learning Programmes

Customised training programmes

CONTACT DETAILS

Tel: +27 12 382 5039 | **Fax:** +27 12 382 4166

Station Director

Dr SJ Jacobs

E-mail: jacobssj@tut.ac.za

Station Manager

Mr Kobus Vorster

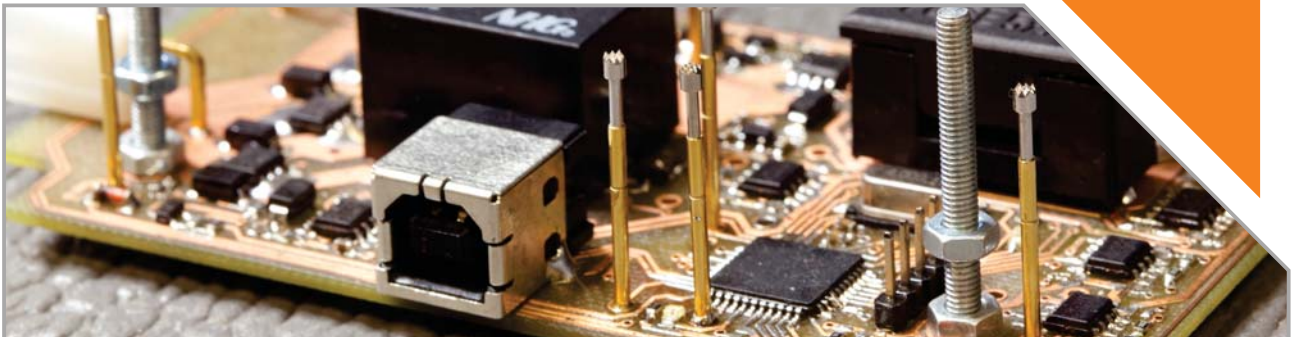
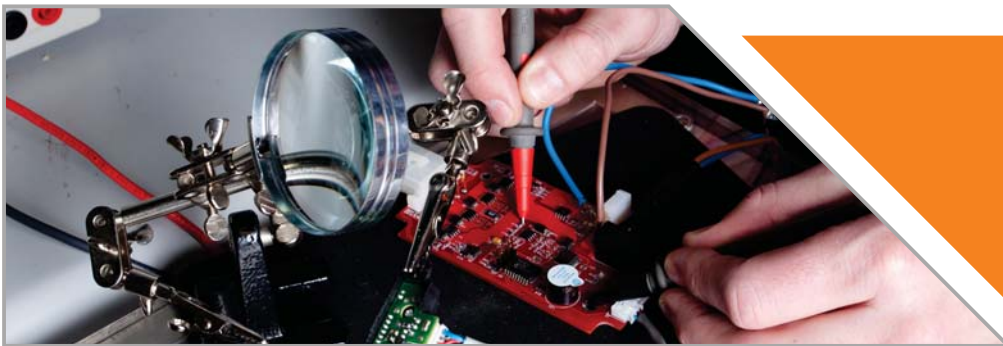
E-mail: VorsteK1@tut.ac.za

Office Manager

Ms Annette van de Poel

E-mail: vanderpoela@tut.ac.za

Website: www.tut.ac.za



An initiative of the Department of Science and Technology

METAL CASTING TECHNOLOGY STATION (MCTS)

The Metal Casting Technology Station (MCTS) is based at the University of Johannesburg (UJ), Doornfontein Campus. MCTS is a technology transfer partner for the metal casting industry, pioneering development through training, research and technology support. The Technology Station operates in partnership with the Department of Metallurgy in the Faculty of Engineering and the Built Environment. MCTS supports and assists the metal casting industry – foundries, suppliers, related industries – to improve the sectors innovation ability for increased competitiveness and sustainability.

TECHNOLOGY COMPETENCIES AND OFFERINGS

- **Casting Design and Simulation**
- **Education and Training**
- **Physical Metallurgy**
- **Rural and Emerging Foundries**
- **Sand Technology**

Casting Design

CAD Design: 2D and 3D Modelling

3D modelling is the process of developing a mathematical representation of any three-dimensional surface of object using specialised software.

Casting Simulation

The process used to forecast pouring, and solidification of liquid metal at different temperatures and environments with a high level of accuracy before conducting actual casting trials.

Education and Training Focus Area

Internship and Graduate Programme

In-house training/short courses

Skills Development

Student Exchange programme

Physical Metallurgy

Chemical Analysis

Failure Investigation

Tensile Testing and Impact Testing

Metallography

SEM and EDX Analysis

Hardness (Rockwell, Vickers and Brinell) Testing

Rural and Emerging Foundries

Development of the rural and emerging foundries

Sand Technology

Green sand testing

Full foundry bentonite and coal dust testing and analysis

Raw silica sand testing - all types of sand

Resin sand testing, heat cured, gas cured and self-hardening systems

Moulding systems trouble shooting

CONTACT DETAILS

Tel: +27 11 559 6032 | **Fax:** +27 11 559 6743

Station Manager

Mr Farouk Varachia

E-mail: faroukv@uj.ac.za

Operations Manager

Mr Kulani Mageza

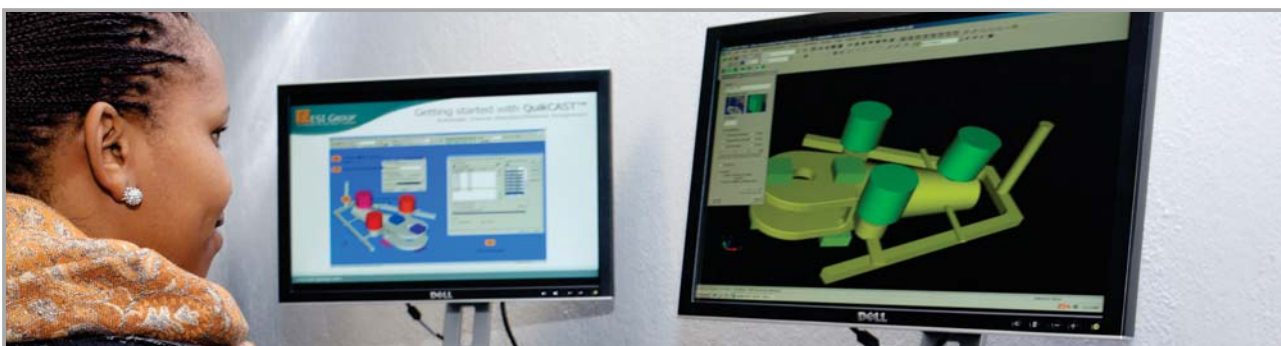
E-mail: kmageza@uj.ac.za

Departmental Administrator

Ms Amy Driessel

E-mail: amyd@uj.ac.za

Website: <http://www.metalcasting.co.za>



An initiative of the Department of Science and Technology

TECHNOLOGY STATION FOR MATERIALS & PROCESSING TECHNOLOGIES [TSMPT]

The Technology Station for Materials and Processing Technologies (TSMPT) is located at the Vaal University of Technology (VUT) Southern Gauteng Science and Technology Park in Sebokeng. It forms part of the VUT's Technology Transfer and Innovation Directorate. As such, it is supported by an Enterprise Development Unit (EDU); Iscor Innovation Centre (IIC); Engineering Manufacturing Centre (EMC) and Institute for Chemical and Biotechnology.

TSMPT assists SME manufacturers of metal-based products and composite-based products to not only improve their products, but their product knowledge, processes, process knowledge and skills. VUT willingly assists and guides potential clients with any viable and marketable products and ideas. This support extends to the acquisition of potential funding through various institutions.

TECHNOLOGY COMPETENCIES AND OFFERINGS

- Additive manufacturing (3DP, FDM, LS)
- Contact digitising
- CNC robotic milling
- GRP casting and composites
- Industrial design and product development
- Management and funding support
- Manufacturing
- Metrology
- Non-contact digitising Tooling and machining Training

Advanced Additive Manufacturing VM

As part of the VUT's advanced manufacturing drive, significant investment has been made in Advanced Manufacturing (AM) platforms. The EOS P100 offers the finest Z-axes resolution in polymer-based laser sintering available in the country. Through its cluster projects, the VUT is currently expanding its AM platforms to three more EOS systems as well as two Voxel jet systems. Future plans will include Stratasys' direct manufacturing technologies.

AM Education and Innovation

The VUT's unique I2P concept (Idea 2 Product™ Lab) offers 14 seats with entry level AM and CAD technologies available to students, school learners and individuals or small companies to test innovative ideas by having the opportunity to develop these into physical products. The recent success achieved with the I2P lab drew international interest leading to acquiring a total of 100 entry level AM machines to start 9 more I2P labs at the VUT's satellite campuses namely: The Science and Technology Park and throughout the Southern Gauteng region.

High End Facilities at TSMPT

With the assistance of the Technology Stations Programme, VUT has made a substantial co-investment in facilities that can be used for technology transfer and demonstration, which will also support research, training and skills development, as well as undergraduate education. Through this collaborative effort, TSMPT can offer significant opportunities for industry as well as the internship training programme. As part of a strategic positioning, much of the planned and acquired infrastructure serves industry in a cluster approach, hence making a significant impact.

Robotic Milling

TSMPT developed unique 5-axes and 8-axes Robotic CNC milling capabilities, which currently serves a diverse industry in a wide array of applications, varying from artistic master patterns for the casting industry. Similar scale work has been completed for the automotive industry where moulds for composites fibre moulding have been developed at significantly reduced costs, compared to conventional technologies. The VUT is one of the only few institutions world-wide using the complex 8-axes milling solution.

CONTACT DETAILS

Tel: +27 16 930 5011 | **Fax:** +27 16 930 5006

Station Manager

Mr Jaco La Grange

E-mail: jacol@vut.ac.za

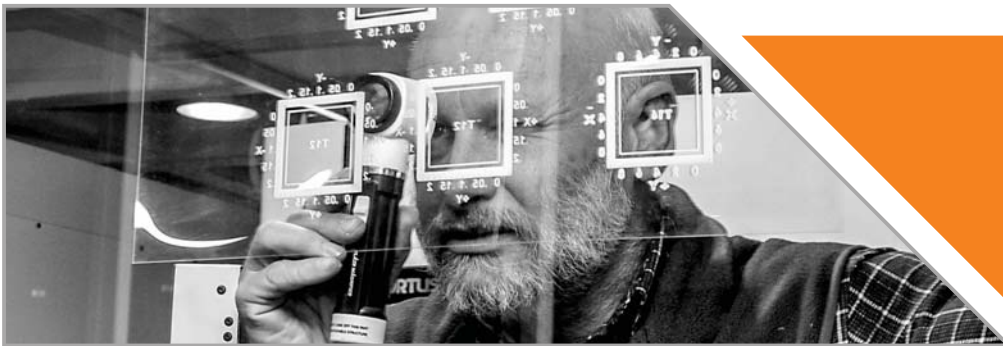
Public Relations Coordinator

Mr Moeketsi Montshitsi

E-mail: moeketsim@vut.ac.za

Website: <http://www.sasciencepark.co.za>

Website: <http://www.vut.ac.za>



An initiative of the Department of Science and Technology

PRODUCT DEVELOPMENT TECHNOLOGY STATION [PDTs]

The Product Development Technology Station (PDTs) is located on the campus of Central University of Technology (CUT) in Bloemfontein. The Technology Station develops new ideas into products, or improve existing products with detailed engineering and develop ideas from concept to prototype. In this way PDTs assists SMMEs by providing them with technological support to design and manufacture innovative new products. The station makes use of first-class engineering expertise from CUT as well as specialized prototyping equipment from the Centre for Rapid Prototyping and Manufacturing (CRPM) to support businesses and individuals through the entire 'new product development process'. The innovative technologies that PDTs makes use of are Computer Aided Designs (CAD), Finite Element Analysis, Rapid Prototyping and Reverse Engineering (3D Scanning). The PDTs services big corporations like Coca-Cola, Aurecon, SA Truck Bodies, Avbob through to SMEs and individuals with an idea that they would like to take further.

TECHNOLOGY COMPETENCIES AND OFFERINGS

- **Product Design and Development**
- **Reverse Engineering**
- **Rapid Prototyping**
- **Tool Development and Limited Run Tooling**
- **Assistive Device Development**
- **Agricultural Equipment Development**
- **Machine Design and Manufacturing**

Product Design and Development

PDTs is involved in the first steps of the product development process through concept design, product design, detail engineering, prototyping and short run production.

Reverse Engineering

Creating an accurate digital representation of an object by means of laser scanning. The digital information is used to create a replica of the original object, or compare the original design to determine how accurately it was manufactured.

Rapid Prototyping

The automatic fabrication of an object directly from Computer Aided Design (CAD) using 3D printing techniques to produce physical prototypes and models.

Tool Development and Limited Run Tooling

The development of manufacturing aids such as cutting tools, dies, gauges, jigs, moulds and patterns of a specialized nature for the performance of a specific manufacturing task. The PDTs also make use of grown tool inserts, also known as 'Rapid Tooling', combining Direct Metal Laser Sintering techniques with conventional tooling practices to produce a mould quickly or parts of a functional model from CAD data. Using this technique, the PDTs can manufacture cooling channels, known as conformal cooling, in mould inserts where traditional CNC machining cannot achieve the required results. Better cycle times can be achieved by this. The PDTs can also assist with the production of limited run tooling for clients that need a small batch of parts, using vacuum casting or injection-moulding to test the functionality, assembly and do market research before investing for final production runs.

Assistive Device Development

The development of products that assist physically impaired individuals to engage in activities making use of the products and devices that was developed by the PDTs.

Agricultural Equipment Development

The development of mechanical devices and implements used in farming to enable the production of crops. These range from simple hand-held implements to complex harvesters of modern mechanized agriculture.

Machine Design and Manufacture

The design and manufacture of machine that are used in the manufacturing or processing of products, such as a bean sieve, pill press or detergent mixer.

CONTACT DETAILS

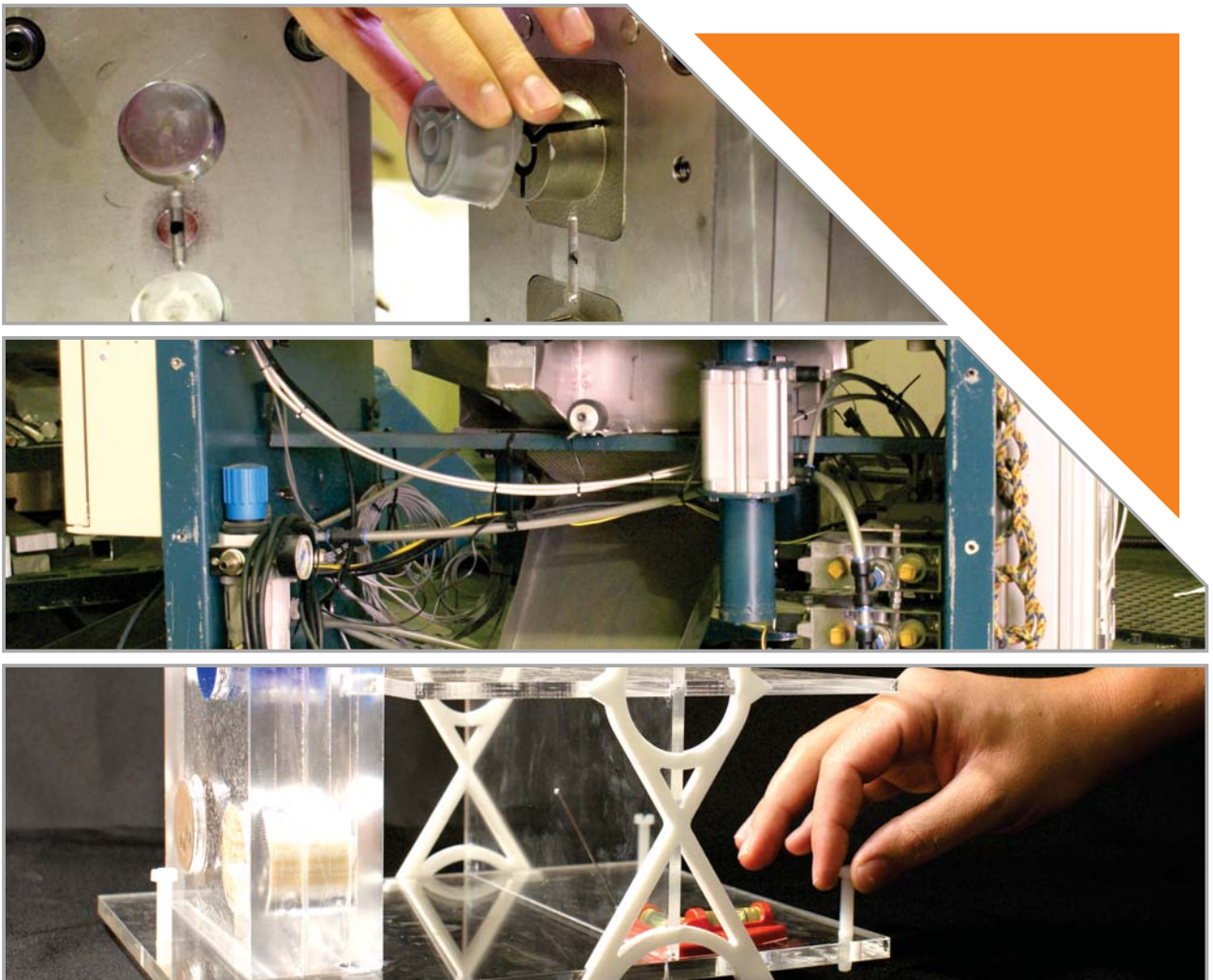
Tel: +27 51 507 3253 | **Fax:** +27 51 507 3589

Acting Station Manager

Mr Marinus Potgieter

E-mail: cpotgiet@cut.ac.za

Website: <http://www.cut.ac.za/pdts>



An initiative of the Department of Science and Technology

eNTSA

eNtsa is recognised as a prominent research, design and technology support unit for the advanced manufacturing sector in South Africa, based in Port Elizabeth at the Nelson Mandela Metropolitan University (NMMU).

eNtsa's main focus is to support and stimulate engineering innovation in order to improve the competitiveness of local manufacturers which will enable industry exploit and development of new markets.

Growing the manufacturing economy in South Africa holds the key to sustainable job creation and improved quality of life. This forms the drive of eNtsa to provide innovative research and advanced technical training for support to the local manufacturing industry according to international best practices.

TECHNOLOGY COMPETENCIES AND OFFERINGS

- **Development and Design**
- **Material and Mechanical**
- **Product Engineering**
- **Process Control and Automation**

Development and Design

Mechanical design
3D Modelling
Finite Element Analysis (FEA)
Rapid prototyping

Material and Mechanical

Mechanical Testing (e.g. Chemical, tensile, fatigue)
Residual stress analysis
Portable x-ray diffraction (non-destructive)
High speed hole drilling (semi-destructive)
High speed camera

Product Engineering

Product and process development
Fatigue analysis
Failure analysis

Process Control and Automation

Automation
Quality Control
Robotics
Vision

Small and Medium Enterprises Development

eNtsa provides support for enterprises in the first, second and emerging economy (SMEs) within the engineering and manufacturing sector, with a specific focus on the automotive components component sector with the aim of making South African automotive industry more globally attractive.

CONTACT DETAILS

Tel: +27 41 504 3073 | **Fax:** +27 41 504 9123

Station Manager

Mr Julien de Klerk

E-mail: julien.deklerk2@nmmu.ac.za

Public Relations

Ms Nadine JM Goliath

E-mail: nadine.goliath@nmmu.ac.za

Website: <http://www.nmmu.ac.za/eNtsa>



An initiative of the Department of Science and Technology

INNOVENTON: INSTITUTE FOR CHEMICAL TECHNOLOGY

InnoVenton: Institute for Chemical Technology is a formally registered Research Institute at the Nelson Mandela Metropolitan University (NMMU), whose principle research focus is in Product and Process Development. The Institute strives to be self-sustaining through income generated from services to industry, income from technology transfer projects and royalties from patents.

The institute incorporates the Downstream Chemicals Technology Station, a Government funded initiative to make available high level research, technological services and training, to technology based Small and Medium Enterprises, and South African Industry as a whole.

The institute incorporates amongst its research facilities a pilot plant for R&D and teaching, the Fuel Chemicals Testing Platform, a Small Production Platform laboratory, and a microalgae production platform. Through the Downstream Chemicals Technology Station (incorporated in the institute) it provides technical support services and training to technology based Small and Medium Enterprises and bigger enterprises in the chemical industry sector.

TECHNOLOGY COMPETENCIES AND OFFERINGS

- **Micro algae technologies**
- **Micro algae to coal fines recovery and agglomeration**
- **Direct liquefaction of microalgae to bio-crude oil**
- **General chemical process development/evaluation**
- **New product development**

The three principle service areas are:

- **Chemical Analytical Services**
- **Chemical Process Technology Demonstration**
- **Training**

Chemical Analytical Service provides a comprehensive range of chemical and material testing and analysis services for industry in the areas of general chemical analysis, materials testing; environmental analysis; biofuels and transport fuels analysis and testing. The laboratory carries South African National Accreditation System (SANAS) for specific methods.

Chemical Process Technology Demonstration (Kilo Lab) a facility for the scale up (milligram and gram quantities) of laboratory – developed chemical process and products, to kilogram quantities. The facility is also used for the demonstration and development of technology on a kilogram scale, as well as for the production of kilogram quantity samples for the industry and for research.

Training is in areas of chemical technology and skills development. DCTS/Innoventon offers a Special BSc Hons programme in Formulation Science and Professional Science Masters courses. It also offers various non-degree applied statistical methods courses, such as data analysis with Excels or analysis scientists and engineers; Statistical process control with Excel or process operators; analysts and engineers and applied biostatistics with Excel.

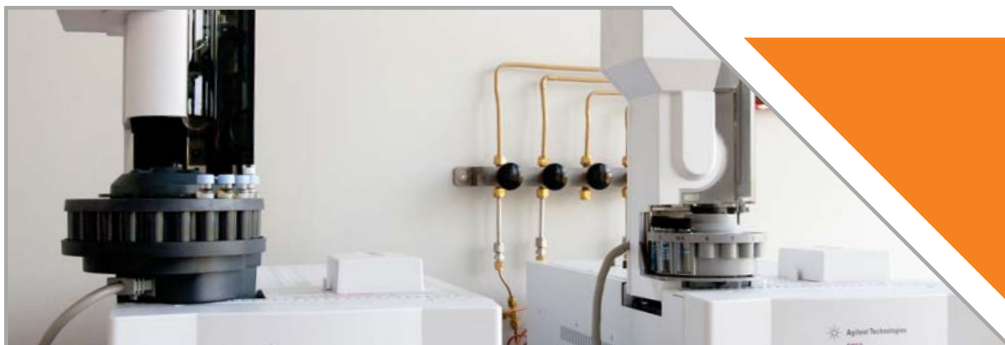
CONTACT DETAILS

Tel: +27 41 504 3281 | **Fax:** +27 41 504 9281

Operations and Technology Station Manageress

Dr Melissa Gouws

E-mail: melisa.gouws@nmmu.ac.za



An initiative of the Department of Science and Technology

TECHNOLOGY STATION IN CLOTHING & TEXTILE [TSCT]

The Technology Station in Clothing and Textiles (TSCT) is located at the Cape Peninsula University of Technology (CPUT), Bellville Campus. The TSCT was established to provide innovation support to SMEs in the clothing and textile industry to become more competitive.

TECHNOLOGY COMPETENCIES AND OFFERINGS

Manufacturing Advisory Services

Manufacturing process assessment and productivity improvement solutions
Provide advice on the acquisition and use of improved technology

Product Analysis and Testing

Materials analysis and testing service to the clothing, textiles and related industries
Provide advice on material usage and care

Product Development

Develop specifications, pattern making, and prototyping, using CAD
Product development advice and services

Technology Platform

A facility to demonstrate range of specialised technology and available to SMEs to develop prototypes. A number of specialised machines available for use of small business on an appointment basis:

- Electronic button-hole machine
- Electronic button-sew on machine
- Electronic bar-tacking machine
- Electronic eyelet button-hole machine
- Embroidery machine and digitiser (for samples)
- Cover seam machine (elasticating)
- Feed off the arm machine
- Hemming machine
- Jet pocket machine
- Merrow edge machine
- Ultrasonic Welding machine
- Walking foot machine

Research

Product and process development
Anthropometry (Body sizing)

Short Courses

Advanced Work Study
Textiles and Fabrics
Textile Testing – Introduction to Textile Testing (1 day)

Training

Programmes are mainly offered on a one-day per week release basis but a number of our courses are also offered after hours to accommodate smaller manufacturers.

CONTACT DETAILS

Tel: +27 21 959 6470 | **Fax:** +27 21 959 6816

Station Manager

Mr Shamil Isaacs

E-mail: isaacssh@cput.ac.za

Admin Assistant

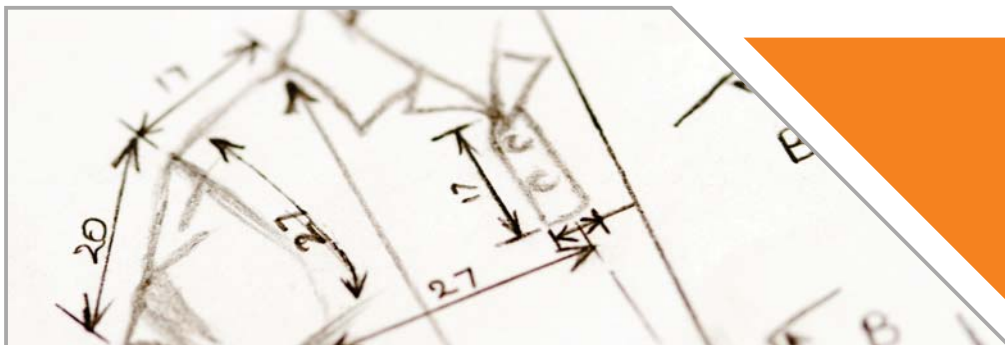
Mr Rushdeen Rose

E-mail: RoseR@cput.ac.za

General Enquiries:

E-mail: techstation@cput.ac.za

Website: <http://www.tsct.co.za>



An initiative of the Department of Science and Technology

AGRIFOOD TECHNOLOGY STATION [ATS]

AgriFood Technology Station (ATS) is well placed in a state of the art complex on the Bellville campus of the Cape Peninsula University of Technology (CPUT). This includes a Pilot Plant with different processing areas for: baked goods, meat products, beverages, chocolate & sweets, spray drying & extrusion and also general heat processing and drying. Besides general and cold stores, there are also a number of laboratory areas such as an R&D lab (for small-scale product development), Research Lab, Instrument Room, Chemistry Lab, Microbiology Lab and a Physical Food Properties Lab.

The mandate of the ATS is to assist small and medium enterprises primarily, but also all other appropriate companies as a secondary goal, to improve their use of technology, implied improvement of efficiencies and also concomitant improved ability to employ more staff and empower such persons in terms of the field of technology in which it operates. Innovation support is the main aim of the game.

TECHNOLOGY COMPETENCIES AND OFFERINGS

New product and process development

Baking and milling
Brewing
Canning, bottling and pouching
Chocolate and confectionery production
Freeze-drying and spray-drying,
Fruit, vegetable, meat and dairy processing
Labelling and packaging advisories
Large processing equipment base in 1 700 m² Pilot Plant
Pasta extrusion
Rental of facilities and expertise for trials
Thermal and non-thermal processing

Food analysis

Chemistry, microbiology, sensory studies, shelf-life determination, texture, viscosity, colour

Research

The Station conducts collaborative research with academics in the following areas:

Auditing of food premises

An initial appraisal may be done by ATS staff but more in-depth audits and implementation of systems may be outsourced to professionals in the field.

Labelling

Considering the national labelling and advertising legislation as amended, it is essential that your product package / label complies. The Technology Stations close contacts with specialists, including the national Department of Health (Food Control), allow us to verify and advise in this regard.

Sensory evaluation

A range of sensory services are available through the Technology Stations own expertise and staff and also via external sensory analysts. Both bench-top analysis and trained panels are available.

Free-standing research projects

In some instances, your company may require free-standing or once-off research to be done on a specific topic. The research may be long or short-term, it may involve bench-work and experimentation or it may just be a literature-based report required. This can be arranged after appropriate consultation and scoping. In some instances, this type of project could also lead to formal qualifications being obtained by students of CPUT or by your own staff involved in the project.

Niche analytical services

ATS offers routine food analytical services such as full nutritional analysis, microbiological testing and testing of food physical properties such as colour, texture, viscosity, etc. More importantly, ATS strives to offer services not available via commercial laboratories. This is done on an agreement basis and may require method development and validation time.

Shelf-life evaluation

Real-time and accelerated studies may be conducted using our facilities for temperature and humidity control. Standard parameters monitored are microbiological safety as well as pertinent chemical characteristics such as water activity and rancidity.

Small-scale trials

Our unique food processing facility and its wide range of modular and mobile equipment allows for tailor-made production trials in many instances. This may be done using ATS as the project manager or the facility may be hired for such purposes provided appropriately qualified personnel are supplied by the user. All of this could be done with appropriate confidentiality in the different areas which include baking, meat processing, spray-drying, extrusion, heat processing (retorting, smoking, can seaming), extrusion and the manufactured foods area.

Training and Compliance

Within constraints and related to numbers and frequency, we can design and offer short courses suited to your company needs. Training with regard to individual instruments or concepts related to food production and analysis can also be offered on a free-standing basis. Enquiries are welcome

CONTACT DETAILS

Tel: +27 21 953 8615

Station Manager

Mr Larry Dolley

E-mail: dolleyl@cput.ac.za

Admin

Ms Ntombi Sigwela

E-mail: sigwelan@cput.ac.za

Website: <http://www.cput.ac.za/ats>



An initiative of the Department of Science and Technology

LIMPOPO AGRO-FOOD TECHNOLOGY STATION [LATS]

Limpopo Agro-Food Technology Station (LATS) was established to achieve the eight anti-poverty targets known as the Millennium Development Goals (MDGs), within the context of the National Development Plans (NDP) Framework. LATS is funded by the Technology Innovation Agency (TIA) in terms of the Technology Innovation Agency Act No. 26 of 2008 is housed at the University of Limpopo (UL), Turfloop Campus.

The Technology Station is well aligned to TIA's connector-service provider strategy. LATS serves as a TIA connector in the Limpopo Province that catalyses partnerships between SMEs, industries and Universities to develop an enabled supporting Agro processing innovation for global competitiveness.

LATS reduces barriers of access to expensive high end skills and equipment for agro processing innovators by supporting technology-based agro-food processing products, processes and services through research and development (R&D) and facilitating the development and improvement of agro-processing, technology innovation and commercialization of agro-food products by start-ups and existing small and micro entrepreneurs in Limpopo Province.

TECHNOLOGY COMPETENCIES AND OFFERINGS

- Food product testing and analysis
- New product development
- Product and process improvement
- Research and development
- Technology audit and training

Food product testing and analysis

LATS tests food products and diagnoses the presence of pathogenic and spoiling microorganism in food products that are ready for markets, using high-tech equipment like Vitek 2 and ICP. Chemical analysis involves minerals and proximal analysis. Tests on food products includes fats, crude fibre, protein, ash, moisture, carbohydrates by difference, energy, vitamins, minerals, antioxidants, polyphenols, tannin and mineral elements.

New product development

SMEs can be assisted from idea generation through to product design and detailed food "engineering". The Station ensures that the newly developed food products meet SABS standards and that health risks are eliminated.

Product and process improvement

This involves improving the quality of substandard products or processes already in use to the standards required by SABS and the Departments of Health and Agriculture. The SMEs are introduced to management systems in which food safety is ensured through the analysis and control of biological, chemical, and physical hazards all the way from raw material production, procurement and handling to manufacture, distribution and consumption of the finished product.

Research and development

The Station ensures that research questions related to SME agro processing are addressed through the use of the university's research academics. Research projects include chemical and microbial profiling of indigenous food product, new product development and food product shelf life.

Technology audit and training

Food technologists visit SMEs in order to audit food-product processing equipment and processes onsite. The SMEs are trained in good manufacturing practice (GMP) and hazard analysis and critical control points (HACCP).

CONTACT DETAILS

Tel: +27 15 268 3359

Station Director

Dr Maboko S. Mphosi

E-mail: maboko.mphosi@ul.ac.a

Admin and Finance

Ms Daphney Malobe

E-mail: mantsim@ul.ac.za

Website: <http://www.ul.ac.za>



An initiative of the Department of Science and Technology

TECHNOLOGY STATION IN CHEMICALS [TSC]

The Technology Station in Chemicals (TSC) offers a wide range of services designed to assist SMEs in the Chemical sector. The Station is located at the Tshwane University of Technology (TUT), Ga-Rankuwa campus and is supported by the Chemistry and Chemical Engineering Departments of TUT. TUT's experienced staff, consisting of Scientists, Technologists, Technicians and external service providers, participate in product development of various projects.

TECHNOLOGY COMPETENCIES AND OFFERINGS

- Development of material safety data sheets (MSDS)
- Formula development
- Hazards and operability studies
- Product analysis
- Product development
- Product evaluation and quality test

Development of material safety data sheets (MSDS)

The MSDS is a very important official document reflecting the hazards and reactive reaction required in time of emergencies during the process of handling the product.

Formula development

TSC has the capability of developing new formulations that will meet the customer's needs. Development or revision of existing formulations is part and parcel of reformulation. N.B. It is extremely important to note is that the Station does not sell formulations.

Hazards and operability studies

The Station can conduct Hazards and Operability studies to identify risks and hazards in settings of SMEs, including the process of manufacturing, raw materials handling and packaging.

Product analysis

TSC conducts both routine and non-routine speciality inorganic and organic analysis and testing.

Product development

Products are developed to meet the customer's need or South African Bureau of Standards (SABS) specification. Developments include pH adjustments, viscosity balancing emulsification, preservation and other corrections of physical and chemical parameters required to render the approved quality product.

Technologies available

Bar Soap Making Technology
Cosmetic Technology
Detergent Technology
Electroplating Technology
Essential Oils Technology
Perfume Making Technology
Surface Coating Technology
Manufacturing different types of paints & vanishes

Product evaluation and quality test

TSC provides specialized testing services to analyse and evaluate existing products.

Product research

TSC conducts research on developing new products and also on improving and optimizing existing products. The research also involves conversion of ideas into prototypes.

Training

- Basic Cosmetic Technology
- Batch adjustments, filling and flushing
- Detergent Technology
- Emulsion Technology
- Large Manufacturing
- Quality Management System (QMS)
- Safety Health and Environment

CONTACT DETAILS

Tel: +27 12 382 0503 | **Fax:** +27 12 382 0838

Station Manager

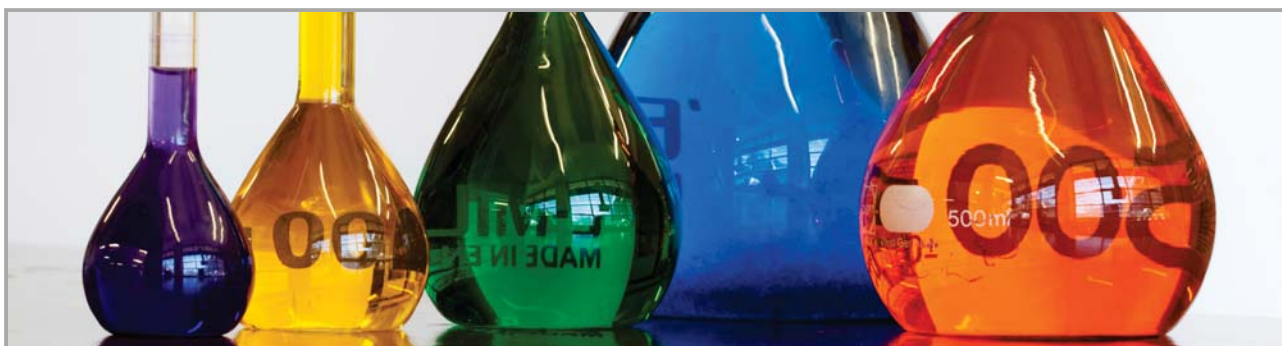
Mr Vincent Tau

E-mail: tauvr@tut.ac.za

Marketing Officer

Ms Tsholofelo Mogonediwa

E-mail: mogonediwatv@tut.ac.za



An initiative of the Department of Science and Technology

TECHNOLOGY STATION IN CHEMICALS [TSC]

The Technology Station in Chemicals (TSC) is situated at Mangosuthu University of Technology (MUT) in Umlazi. MUT provides technological support and promotes innovation for Small Medium Enterprises in the Manufacturing and Chemical sector.

TECHNOLOGY COMPETENCIES AND OFFERINGS

- **Environmental Pollution Control**
- **Pilot Batch Processing Unit**
- **Process Design and Development**
- **Product Design, Development and Improvement**
- **Setting Product Quality Standards**
- **Technology Audits**
- **Technology Information Support**
- **Training**
- **Waste and Effluent Management**

Environmental Pollution Control

Conduct Environmental Impact Assessments.
Provide Quality testing services on water (and wastewater), effluent and soil samples.
Tests conducted include; BODs, CODs, DOs, inorganics (metals and salts); presence of microorganisms, algae and organics.

Pilot Batch Processing Unit

Demonstrate optimal batch mixing techniques for high-quality production. Production of soaps and detergents and cosmetics.

Process Design and Development

Assist in designing new processes to gain a competitive edge and develop (improve) existing processes for increased efficiency and throughput.

Product Design, Development and Improvement

Provide assistance in designing 'tailor-made' products for specific markets (Product Formulation Services) and improve performance and characteristics of existing products for increased competitiveness.

Setting Product Quality Standards

Improve quality standards through product testing and product formulation services.

Technology Audits

Provide assessment on the status of technologies in use and provide strategic direction for technology upgrading and/or acquisition where necessary.

Technology Information Support

Provide information and advice on new trends in product quality, product and process developments, local and international markets, and viable technologies.

Training

Internship

Waste and Effluent Management

Small and Medium Enterprises receive training on techniques and methods that can be used to control effluent volumes (move towards zero effluent) and reduce contaminant levels.

CONTACT DETAILS

Tel: +27 31 907 7453 | **Fax:** +27 31 907 7385

Director

Veronica Ngubane

E-mail: veronica@mut.ac.za

Secretary

Ms Nandipha Khulu

E-mail: tia@mut.ac.za



An initiative of the Department of Science and Technology

REINFORCED AND MOULDED PLASTICS TECHNOLOGY STATION [RMPTS]

Reinforced & Moulded Plastics Technology Station (RMPTS) is located in the Durban University of Technology (DUT) in KwaZulu Natal, Durban at the Steve Biko Campus.

RMPTS is the technology transfer mechanism for the Centre for Advanced Material, Design & Manufacture with a mission of advancing the reinforced and moulded plastics sector through technological innovation, forward thinking and research & development.

The department specialises in composite materials and plastic tooling technology and this saw the decision to formalise the technology transfer of the department in the TS with a focus on reinforced and moulded plastics.

The Station is very well equipped currently and is able to assist industry with respect to design, specimen testing, prototype construction, tooling fabrication, metrology, limited production runs and general machining.

The main focus of the TS is to provide companies within the reinforced and moulded plastics sectors with assistance in product design, prototype development and tooling design, development and manufacture.

TECHNOLOGY COMPETENCIES AND OFFERINGS

Generally, the Station specializes in conceptual design, design analysis, optimization and verification of non-metallic and metallic:

- Aerospace and other advanced structures
- Custom fabrications
- Pressure and vacuum vessels
- Process tanks and vessels
- Specialized process equipment
- Piping and ducting systems

Technology Station Services:

Design and fabrication of injection moulds and tools
 Design and fabrication of mechanical parts and systems, jigs and fixtures
 Failure analysis
 3, 4 and 5-axis CNC milling
 CNC turning
 Metrology
 3D printing

CONTACT DETAILS

Tel: +27 31 373 2543

Station Manager

Prof Mark Walker

E-mail: walker@dut.ac.za

Design Engineer

Mr Ryan Hamilton

E-mail: rynh@cut.ac.za

Website:

www.dut.ac.za/technology_stations/reinforced_moulded_plastics



An initiative of the Department of Science and Technology

INSTITUTES FOR ADVANCED TOOLING

The Institutes for Advanced Tooling (IATs) are positioned to be occupational centres of excellence for Skills Development; Technology Transfer and Diffusion to accelerate the country's growth in the Tool, Die & Mould (TDM) making sector (Tooling sector), through the core business of promoting sustainable tooling in collaboration with international leading tool making private institutions, academia and the local tooling industry.

The aim is to change tool manufacturing from a resource-driven process to a knowledge driven process by offering a well - balanced combination of technology enablers for all steps of the extended product life cycle to SME's in the tooling sector.

The focus of these IATs is on:

- Tool Design
- Tooling Technology Transfer
- Research and Innovation

There are three IATs within the Technology Stations Programme, located at three different Higher Education Institutions.

Institute of Advanced Tooling (IAT-TUT)

Tshwane University of Technology
Soshanguve

Operations Manager: Mr Jeff Makhubela

Tel: +27 12 382 9227

Institute of Advanced Tooling (IAT-WSU)

Walter Sisulu University
East London

Station Manager: Mr Kerry Newey

Tel: +27 43 709 4751

Institute of Advanced Tooling (IAT-SU)

Stellenbosch University
Stellenbosch

Tooling Operations Manager: Nicholas Goniwe

Tel: +27 21 808 4132/4128



An initiative of the Department of Science and Technology

INSTITUTE FOR ADVANCED TOOLING TSHWANE UNIVERSITY OF TECHNOLOGY [IAT-TUT]

The Institute for Advanced Tooling (IAT) is based at the Tshwane University of Technology (TUT), Soshanguve South Campus.

IAT-TUT key objectives are to:

- Improve the competitiveness of SMEs in the tooling industry through the growing of highly skilled and educated workers with challenging jobs, which are capable to deliver quality products and processes that meet the OEM requirements.
- Deliver a new paradigm of high added value tools and tool making business models that will reposition tool and die makers as key strategic partners in the value chain in accordance with relevant industry needs.
- Contribute to the improvement of global competitiveness of the South African manufacturing industry.

TECHNOLOGY COMPETENCIES AND OFFERINGS

- **Engineering Change Requests (ECR)**
- **Part Inspection/Measurement**
- **Product Development/Design/CAD/CAM Technology**
- **Computer Aided Design (CAD)**
- **CNC Machining**
- **Tool Design & Manufacturing**
- **Tool, Die and Mould (TDM) Training**

Engineering Change Requests (ECR)

Injection Moulds modifications for the automotive sector. The work involves making changes to existing moulds as a result of changes to parts or components designs.

Part Inspection/Measurement

2D and 3D part inspection and/or measuring using the Coordinate Measuring Machine (CMM).

Product Development/Design/CAD/CAM Technology

Any product design and/or development for tooling in any of the three specified tool design specialisation.

CAD (design) the following software are used

- o AutoCAD
- o NX
- o PowerSHAPE (Tool Maker)

CAM (machining) the following software are used

- o PowerMILL (CNC machining on the 5-Axis & 3-Axis machines)
- o FeatureCAM (CNC machining on the Wire EDM machine)

CNC Machining

High precision machining with the following machines

- o 5-Axis High Speed milling
- o 3-Axis milling
- o Turning
- o Wire EDM
- o EDM Die Sink

Tool Design & Manufacturing

Jigs & Fixtures
Press Tools
Injection Moulds

Tool, Die and Mould (TDM) Training

- o Internship Programme in the TDM field
- o CNC (Turning & Milling) training in both programming and machining – specialised training for National Tooling Initiative Programme (NTIP) students
- o On-Job-Training (OJT) for NTIP students
- o Specialises in Tool, Die & Mould modules as part of the Work-Integrated-Learning (WIL) for Mechanical Engineering students
- o Skill Development & Transfer

CONTACT DETAILS

Tel: +27 12 382 9227 | **Fax:** +27 12 638 4769

Operations Manager

Mr Jeff Makhubela

E-mail: makhubelamj@tut.ac.za

Training Coordinator

Mr Patrick Marasi

E-mail: marasip@tut.ac.za

Administrator

Mrs Tebogo Tsomele

E-mail: tsomeletg@tut.ac.za



An initiative of the Department of Science and Technology

INSTITUTE FOR ADVANCED TOOLING WALTER SISULU UNIVERSITY [IAT-WSU]

This Institute of Advanced Tooling (IAT) is based at Walter Sisulu University (WSU) Buffalo City, satellite Campus in East London. IAT-WSU focuses mainly on mechanical design, concept and product development, metrology (3rd party measurement), analysis, skills development and more recently, advanced manufacturing and reverse engineering.

The strategic objectives of the Station are to provide technology support services and training to the (predominantly) regional manufacturing sector, SME's, inventors, individuals, academic partners and in some cases large companies.

TECHNOLOGY COMPETENCIES AND OFFERINGS

Advanced Manufacturing

3 & 3+2 Axis CNC Milling (Digital Tool & Work Piece Setting)
Large Formant CNC Robotic Milling (Pattern/Plug Machining)

Analysis / Simulation

FEA (Linear Static, Buckling & Dynamic)
CFD (Static & Transient)

Applied Research and Development

Renewable Energy and CNC Robotic Milling

Consultancy Services

Technology Audits and Industry Surveys

Design

The IAT is equipped with Siemens NX CAD/CAM/CAE software modules including:

- o 3D Solid & Assembly Modelling, 2D Layouts
- o 3D Surfacing (engineered & free-form shapes)
- o Basic Plastic Injection Mould Design
- o Basic Jigs & Fixture Design
- o Computational Fluid Dynamics (CFD)
- o Component Design (Mechanical Design)
- o General **CAD**, Component Design, Core & Cavity Extractions & Model Optimisation
 - o Solid & Surface Modelling (Advanced CAD)
- o Product Design, Development, Prototyping and Mould Design
- o Quality Assurance (CMM, 3rd Party Measurement)
- o Research & Development & renewable energy projects
- o Sheet Metal Design
- o Mould Wizard (plastic injection mould design)
- o Motion Simulation
- o NX Nastran Simulation (FEA linear static, buckling & dynamic analysis)
- o NX **CAM** (NC programming for milling & turning)
 - o 3 Axis NC Programming
 - o 3+2 Axis CNC Programming
 - o NC Robotic Milling Programming & Simulation (Kuka CNC)

General Manufacturing

Mechanical Fabrication and Steelwork Fabrication

Metrology / CMM

3rd Party Measurement, Metrology & Conformance

Reverse Engineering

Digital Laser Scanning & CAD Model Development

Technology Demonstration & Training

AutoCAD Basic & Advanced
Internship
Introduction to CNC Programming/Machining
Jigs & Fixture Module
Plastic Injection Design Module
Press Tool Module
Siemens NX

CONTACT DETAILS

Tel: +27 43 709 4751 | **Fax:** +27 43 709 4710

Station Manager

Mr Kerryn Newey

E-mail: knewey@wsu.ac.za

Operations Manager

Mr Masakhane Mapoloba

E-mail: mmapoloba@swu.ac.za

Admin and Finance

Ms Yandiswa Vandala-Dodo

E-mail: yvandala@swu.ac.za



An initiative of the Department of Science and Technology

INSTITUTE FOR ADVANCED TOOLING STELLENBOSCH UNIVERSITY [IAT-SU]

IAT – SU vision is to work towards a national effort to build the innovation capacity of the South African tooling industry. The IAT works with companies aiming to improve their competitive position towards domestic and international competitors; change tooling manufacture from a resource driven to a knowledge driven process by offering a well-balanced combination of technology enablers for all steps of the extended life cycle to small medium enterprises (SME's) in the tooling sector. The IAT aims to create a foundation for a new mould making business concept based on technology innovation which, concerning the particularities and the typical dimension of the South African SME's, pushes the sector towards a new position as high added value engineering service providers. The IAT further stimulates the shift of the tooling industry, which is traditionally less R&D intensive, to a high-added-value sector.

TECHNOLOGY COMPETENCIES AND OFFERINGS

- **3D Digitizing and Reverse Engineering**
- **Additive Manufacturing**
- **Aluminium Components Forming Assemble**
- **Conformal Cooling Design and Realisation**
- **Five Axis High Performance Machining**
- **Sheet Metal Simulation**
- **Quality Control**

3D Digitizing and Reverse Engineering

Reverse Engineering is the process of digitizing a physical object to obtain computed data for further development. From a 3D scanning system, digital data is obtained. This digital data can then be taken into appropriate CAD software whereby it can be used to recreate a surface or solid model. The CAD data can be exported in various formats. This is a very efficient way to obtain a component model especially when CAD drawings or other information is not available.

Additive Manufacturing

Metallic powder is fully fused by laser beam to produce a 100% component density to conform to a design of complex cooling configurations. This gives rise to productivity improvements of the moulding process.

Aluminium Components Forming Assemble

Machining of various aerospace aluminium components forming an assembly. Undercut regions and small corner radii make simultaneous 5-axis machining a necessity. Each component is machined in a single setup using a fixture. High material removal rate using 5-axis HSC. Innovative Work Holding for machining of aerospace components made of light metals.

Conformal Cooling Design and Realisation

Conformal cooling improves cooling behaviour. Additive technology allows cooling configuration design to conform to component geometry.

Five Axis High Performance Machining

Machining challenges due to material characteristics of difficult to machine materials, i.e. titanium alloys. Used mainly in Aerospace industry due to its strength to weight ratio. Components have difficult geometries, including undercuts and thin walls. Development of CAM programming strategies to improve machinability and efficiency.

Plastic Flow Simulation

Plastic flow simulation through Moldex 3D, Moldflow Part and Mould Adviser, analysis of plastic flow during the injection moulding process. Plastic flow simulation is aimed at helping clients to foresee and solve problems in the design of moulds in the first stage of product development.

Sheet Metal Simulation

Offers simulation services, to make process and die design choices before committing to the manufacture of the tool. This often reduces the try out time, costs and risk associated with the tooling design and the development cycle.

Quality Control

Part inspection of large and small objects on CMM Mitutoyo Bright 710. Part inspection of large and small objects by GOM Digitising camera or Cimcore Infinite Measuring Arm.

CONTACT DETAILS

Tel: +27 21 808 4132/4128 | **Fax:** +27 21 808 4126

Tool Operations Manager

Mr Nicholas Goniwe

E-mail: goniwe@sun.ac.za

Website: <http://www.tia.org.za>



An initiative of the Department of Science and Technology

ADAPTRONICS ADVANCED MANUFACTURING TECHNOLOGY LABORATORY [AMTL]

Adaptronics Advanced Manufacturing Technology Laboratory (AMTL) is located at the Cape Peninsula University of Technology (CPUT), Bellville Campus.

The primary objective of the unit is to specialise as a national manufacturing, research and educational resource centre for Adaptronics Technologies in South Africa. Adaptronics is the technology that integrates sensor and actuator functions into materials, components and structures so that they may react to environment stimuli thus making them intelligent.

Four Research and Technology focus areas of specialization have established.

TECHNOLOGY COMPETENCIES AND OFFERINGS

- **Adaptronics Technology**
- **Automotive Technologies**
- **Ocean Engineering**
- **Universal Design**

Adaptronics Technology

Research and Technology projects into the development of intelligent structures, MEMS and Nano-Sensing Devices.

Automotive Technologies

Research and Technology projects related to motorsport and alternative/green propulsion systems.

Ocean Engineering

Research and Technology projects related to maritime applications.

Universal Design

Research and Technology projects providing access to physically challenged individuals.

These areas form the foundation of the Adaptronics AMTL's Human Capital Development Programme, and include student R&T projects ranging from Internships, Bachelors, Masters, Doctoral and Post-Doctoral activities. AMTL has dedicated staff of Technologist, Technicians, and Artisans involved in industry related activities ranging from design, prototyping, testing; and process and programme development.

CONTACT DETAILS

Tel: +27 21 953 8435 | **Fax:** +27 21 959 6892

Station Director

Prof Oscar Philander

E-mail: philandero@cput.ac.za

Operations Manager

Mr Eugene Erfort

E-mail: erforte@cput.ac.za

Administrator

Ms Leigh-Anne Davids

E-mail: davidslan@cput.ac.za

Website:

www.cput.ac.za/academic/faculties/engineering/research/amtl



An initiative of the Department of Science and Technology

PROCESS ENERGY AND ENVIRONMENTAL TECHNOLOGY STATION [PEETS]

Process Energy and Environmental Technology Station (PEETS) is located at the University of Johannesburg (UJ) Mapulong Building, Doornfontein Campus. The primary mandate for the PEETS is to contribute towards improving the competitiveness of industry through the application of specialised knowledge, technology and facilitating the interaction between industry (especially SMEs) and the academia in order to enable innovation.

FOCUS AREAS:

- **Environment & Water (Solid Waste Management, Waste Water, Clean Water, Air Pollution)**
- **Renewable & Solar Energy (Bios-gas, Energy and Energy Efficiency)**
- **Photovoltaic Cell Bio-energy Bio Diesel**

TECHNOLOGY COMPETENCIES AND OFFERINGS

- Air Quality Auditing
- Energy Auditing
- Engineering Consultation
- Environmental Impact Assessment
- Process Optimization
- Product and Process Development / Improvement
- Prototype Assembling
- Testing / Analysis
- Technology Research and Development
- Training and Demonstration
- Waste Characterization
- PEETS is committed to provide the highest level of quality and professionalism in interaction with stakeholders. We pride ourselves in stating that we are the only organization that serves as a catalyst to shorten the gap between Academia and Industry in the Energy and Environmental sector.

CONTACT DETAILS

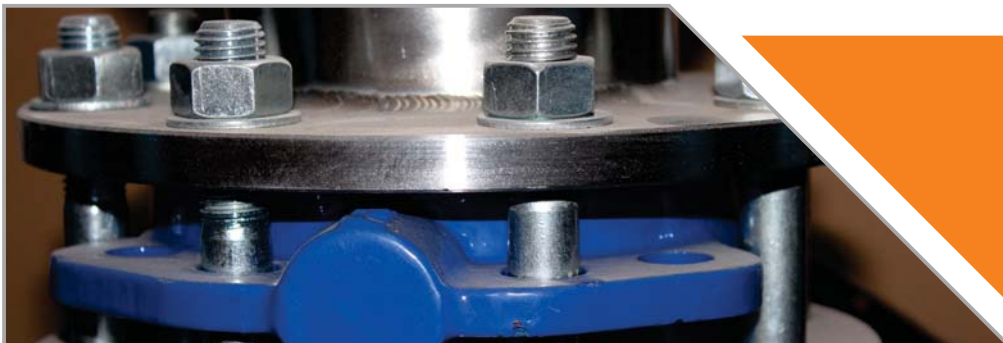
Tel: +27 11 559 6541 | **Fax:** +27 11 559 6881

Station Manager

Ms Nickey Janse van Rensburg

E-mail: nickeyjvr@uj.ac.za

Website: <http://www.uj.ac.za>



An initiative of the Department of Science and Technology

TECHNOLOGY STATION IN RURAL SUSTAINABLE DEVELOPMENT [TSRSD]

The Technology Station in Rural Sustainable Development (TSRSD) is located at Upington in the Northern Cape. The Station is affiliated to the Vaal University of Technology (VUT) Sebokeng's campus. It forms part of the VUT's Technology Transfer and Innovation Directorate. As such, it is supported by an Enterprise Development Unit (EDU); Iscor Innovation Centre (IIC); Engineering Manufacturing Centre (EMC) and Institute for Chemical and Biotechnology at the Sebokeng Campus.

TSRSD offers two types of consulting and training services. The first type focusses on product development, and the improvement of product knowledge and skills. The second type concentrates on process improvement, and the improvement of process knowledge and skills.

The aim is to create a sustainable Station, which can be used to broaden the applied research base of VUT, build research and innovation capacity, facilitate technology transfer skills to the Upington community – including commerce, industry, agriculture, rural/urban and informal community settlements.

TECHNOLOGY COMPETENCIES AND OFFERINGS

Services

Business Support

Entrepreneurship support

Manage the execution of projects to fulfil identified needs, through the collaboration between TSMPT and TSRSD and other stakeholders.

Product Development (partnership with TSMPT)

Technology auditing and identifying the needs within Upington and the surrounding districts

Technology facilitation agent and coach clients in the optimal use of developed resources and technology platforms

Transfer identified needs into executable and fundable projects and business plans

Training

E-skills training facility

Solar Energy Products (Manufacturing and Installation)

Artisan Training (Welding, Renewable Energy, Mechanical and Electrical Engineering)

CONTACT DETAILS

Tel: +27 54 331 3268 | **Fax:** +27 86 664 9041

Station Manager

Mr Martin Lotz

Administrator

Ms Mariaan Steenkamp

Website: <http://www.vut.ac.za>

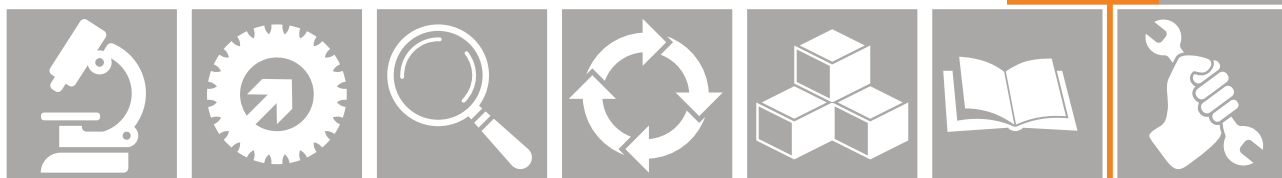


An initiative of the Department of Science and Technology

NOTES

NOTES

NOTES



TECHNOLOGY INNOVATION AGENCY

Head Office:

TIA House

83 Lois Avenue, Pretoria

Tel: 012 472 2701

Postal Address: P.O. Box 172, Menlyn, Pretoria, 0063

KwaZulu-Natal Regional Office:

4th Floor Office

102 Stephen Dlamini Road (Previously Essenwood), Musgrave, Durban

Tel: 031 271 4500

Postal Address: P.O. Box 30603, Mayville, Durban, 4058

Western Cape Regional Office:

4th floor, Central Park

Black River Business Park, Fir Road, Observatory, Cape Town

Tel: 021 442 3780

Postal Address: P.O. Box 13372, Mowbray, Cape Town, 7705

Web Address: www.tia.org.za | **Email:** services@tia.org.za