

CSIR International Convention Centre

naturally hospitable • globally accessible



THE SCIENCE CAPITAL OF SOUTH AFRICA

The CSIR International Convention Centre offers superb facilities and quality service with conference, function and exhibition venues that can accommodate events of 500 to a small group of 10 delegates and guests, with groups as large as 1000 being accommodated at times. Flexibility, service excellence and professionalism are key to what the International Convention Centre offers its clients.



“ *The City of Tshwane is arguably the intellectual capital of South Africa given its vast number of knowledge institutions, and the International Convention Centre can, through its fit-for-purpose venues, orchestrate and coordinate events in a seamless experience to ensure that we do not only act as a venue but as a role player in the formation of the solutions that are discussed within our platform, to exchange knowledge and to come up with solutions for the challenges facing society.* ”

*Minister Kganyago, CSIR ICC Business
Development Manager*



The City of Tshwane is one of the biggest diplomatic capitals of the world with a whole range of countries and international organisations represented here, but crucially the City of Tshwane is the science capital of South Africa,” says the Deputy Director General of the Department of Science and Innovation, Daan Du Toit. Du Toit says: “The research and innovation produced here in the City of Tshwane, whether in our universities, in our public-funded

organisations and the private sector responds to the key societal challenges we as a globe face, the type of challenges where we all need to work together. So, what we have in the City of Tshwane is the science, which is not only relevant for society and the needs of society, but also science which is recognised across the world for its excellence, and which is open for global partnership. We also have the important infrastructure to support such a collaborative effort as well as vast experience so the knowledge community in Tshwane in my view deserves its reputation as a trusted global partner."

GEARED FOR COLLABORATION

Prof Wynand Steyn, Civil Engineering Professor at the University of Pretoria, adds: "The benefit for us in Tshwane, with the number of educational institutions as well as science councils such as the Council for Scientific Industrial Research and the University of Pretoria,

is that we are physical neighbours. It means that we've got a memorandum of understanding that immediately not only links us, but it links us with everybody else that we've got connections with. "So if the CSIR has got a collaboration with an entity in Russia and we collaborate with them, then that collaboration becomes one of our potential collaborators and by doing that it means that we don't have several small entities, trying to build up new collaborations. It means the outside world can see us as a larger entity with a lot of critical mass to do a lot of good work. As we start to collaborate, from a local and international viewpoint, we can do work that changes the world."

ABOUT THE COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH (CSIR)

The Council for Scientific and Industrial Research (CSIR) is a leading scientific and technology research



organisation that researches, develops, localises, and diffuses technologies to accelerate socio economic prosperity in South Africa. The organisation's work contributes to industrial development and supports a capable state. This organisation plays a key role in supporting public and private sectors through directed research that is aligned with the country's priorities, the organisation's mandate and its science, engineering, and technology competences.

CSIR CONTACT INFORMATION:

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The City of Tshwane

South Africa's Capital City, the City of Tshwane, is situated in the province of Gauteng, the economic centre of South Africa. As the seat of government, Tshwane is the country's administrative hub and houses:

134
embassies

30+
JSE-listed companies and multinational companies

90%
of medical, science and technology research in the country produced through Tshwane's high concentration of academic, medical, social science, technology and scientific institutions

60%
of the country's overall research output is produced in Tshwane

30
international organisations, making it second only to Washington DC in terms of the concentration of diplomatic and foreign missions technology and scientific institutions



PRECINCT OF KNOWLEDGE ORGANISATIONS

Bronwen Cadle de Ponte, CSIR Conferencing and Accommodation Group Manager, adds: "When we bring international conferences to

this city and this precinct of knowledge organisations, the content, programme and interactions can be much richer because of the people that live in the surrounding areas, and because of the technologies that can be viewed and demonstrated on-site, without having to travel far out of its home destination. "There are a lot of world firsts that have happened in the CSIR and other institutions surrounding us, and it's for us to share that knowledge with the rest of the world. Africa has a lot to offer and often we find that international professionals that come and visit us and speak at conferences go

back absolutely astounded at what they have learned from this country and from the institutions and the work that we have going on here in South Africa, in the CSIR, and in the city of Tshwane."



HEALTHCARE

The CSIR has applied its multidisciplinary expertise to strengthen primary healthcare in the country. This includes the strengthening of information and communications technology systems and the development of point-of-care diagnostic devices.

A POINT-OF-CARE ULTRASOUND DEVICE

One of the challenges with reducing South Africa's infant mortality rate is improving access to specialist obstetric care for those that need it while reducing unnecessary referrals. In trials undertaken in the Tshwane district, it was shown that a CSIR developed Doppler ultrasound device has the potential to significantly reduce the perinatal mortality rate.

More than 2 640 women participated in a clinical trial started in multiple Tshwane clinics, of which 324 were classified as high-risk and referred to the hospital.

1 096

women who gave birth

10%

showed abnormal results with the Umbiflow screening

10%

of the group showing abnormal results estimated to give stillbirth if abnormal reading had not been detected

Umbiflow has the potential to reduce the perinatal mortality rate by up to

50%

The perinatal mortality rate with and without Umbiflow screening

Women who had access to Umbiflow screening	Women who were not Umbiflow-screened
11.3/1000	21/1000



UMBIFLOW ADDRESSES CHALLENGES OF EMERGENT NATIONS

Dr Kahesh Dhuness, CSIR Principal Research Scientist, says: "In South Africa, we don't have a large number of trained obstetricians to go out into the rural areas to look at mothers and advise them about the health of their babies and the risk of them being stillborn, and that's where Umbiflow came into the picture. It's a simple device used on mothers in the third trimester of pregnancy and connects to a Windows or an Android machine. After a nurse takes a measurement, it outputs the measured results."



AGRO-PROCESSING

Agro-processing refers to a subset of the manufacturing sector that processes raw materials and intermediate products derived from the agricultural sector. The aim is to develop and advance new processing technologies from lab to pilot and commercial scale implementation, using tools to demonstrate product and process capability at various scales. The CSIR has sound expertise in agro-processing. Experts in this field include qualified chemical engineers, chemists, food scientists and biotechnologists with extensive specialised experience.



Dr Nomusa Dlamini: CSIR Principal Research Scientist, says:

"Agro-processing can be crop production, animals or even forestry. But nowadays we normally focus agro-processing on food production. And then in South Africa when you talk about agro-processing it's not just food but you're also talking about the indigenous resources that we have."

NUTRI-DRINK ADDRESSES NUTRITIONAL DEFICIENCIES

The CSIR is working on several projects that rely on agro-processing, such as the Nutri-drink project, in which researchers developed a nutritional drink from a combination of food products such as sorghum, soya, milk, as well as local and indigenous leafy vegetables. The CSIR is evaluating the bio-accessibility of the micronutrients in the drink to the human body to determine its nutritional value. Dlamini says: "Basically we were looking at rural schools, rural environments where

children go to school hungry. With the Nutri-drink we asked what do we do with hungry children? So, we created Nutri-drink to address some of the nutrient deficiencies that we found very prevalent in these children. And we gave it to children for about two years, but the actual study was based on eight months where we did the baseline. And then after the baseline we did the final assessment, (where) we found that the children had grown, especially the younger children, we found that even their earlier status had improved."



WORKING WITH INDIGENOUS KNOWLEDGE HOLDERS

CSIR is also working with communities and indigenous stakeholders to offer opportunities to develop new ingredients. Dlamini says: "At CSIR we work closely with some of the communities, some of the indigenous knowledge holders. We optimize extraction technologies so that these products are ready to be used in various ingredients. So globally the CSIR and South Africa, working with the communities and indigenous knowledge diversity, offer opportunities for new ingredients that can be developed and that can be optimised."

SMART MOBILITY

CSIR Smart Mobility addresses challenges and opportunities associated with transport systems and operations, infrastructure, transport operations, and logistics management in support of industrial and sustainable development. The CSIR seeks to improve

the efficiency, safety, cost and reliability of transport networks to minimise the cost of doing business and to improve quality of life. Prof Wynand Steyn: Civil Engineering Professor: at the University of Pretoria, says: "We train, educate and do research around civil engineering, which

looks after infrastructure: roads, buildings, bridges, and tunnels. Once we do the foundation part and we're finished with that, then we have to see how it affects society and that's where it becomes very important that the research and the education we do, continues.



SMART TOMAROS AND AVOCADOS

Steyn says: "For instance one of our really exciting projects is where we developed smart avocados and smart tomatoes that can tell you what the fruit experiences during the whole trip from the plant to the market. Now, why is this important for civil engineers and society? It is important because we have to look after the design of the pack houses and the maintenance of the roads on which these fruits are being transported."



