# The Laser Research Institute

The institute currently consists of 6 academic members and about 20 postgraduates students from honours to postdoc level..

We perform fundamental and applied research in the field of Photonics, educate young scientists and aim to create awareness of laser science and technology to the surrounding community through our outreach programs.

The LRI is the only institute in Southern Africa where an outcomes based degree in laser physics can be obtained.

The LRI is located on the University of Stellenbosch campus in the Merensky building.



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Laser Research Institute University of Stellenbosch



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## Laser Research in Stellenbosch

The Laser Research Institute (LRI) was founded in 2000 as a centre for laser science and technology.

A dynamic group of academic staff and post graduate students is advancing laser science under the banner of the LRI. We offer an honours course in Laser Physics and have positions for MSc and PhD students available.

Our research comprises scientific applications of lasers as well as laser development. Research projects include

- high resolution vacuum ultraviolet spectroscopy of molecules and solids
- investigation of nonlinear optical effects on surfaces and interfaces
- different methods of ultrafast spectroscopy.

We are involved in short pulse fibre laser and solid state laser amplifier development. Various applications to material processing, fluorescence and plasma techniques complete the portfolio of the LRI. The Stellenbosch University and Department of Science and Technology funded research infrastructure includes a state of the art ultrafast spectroscopy laboratories, a tuneable vacuum ultraviolet laser source and fibre laser lab.

We benefit from collaborations with the National Laser Centre, the African Laser Centre and research partners in Africa and Europe.



## **Mission Statement**

To carry out internationally competitive research and development in laser science and technology and their applications, to train students in the field of lasers and their applications and to create awareness of laser science and technology amongst the broader community.



## Contact

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#### **Outreach Programs**

The LRI has a variety of demonstrations aimed at high school learners. The demonstrations include an introduction to lasers, an overview of laser safety and the polarization of light. These demonstrations take place at the LRI.

Our travelling outreach program aims to promote optics to schools in Stellenbosch and the surrounding areas. We have a multitude of interesting experiments and fascinating optical phenomena that young learners are able to explore. We will bring all the necessary material and provide hands on advice to learners and teachers. Please contact us to arrange a visit!

The LRI also has access to the physics departments excellent facilities that may assist teachers in demonstrating physical principles applicable to the school syllabus.



Optical Society of America Student Chapter University of Stellenbosch

#### **OSA Student Chapter**

An Optical Society of America student chapter has been established at the University. Through this chapter funding has been secured for a number of outreach projects. The student chapter has also led to post graduate students gaining valuable exposure to international research projects.

#### Contact

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