



Department of Physics UNIVERSITY OF JOHANNESBURG

**The Future
Reimagined**

The Department of Physics (APK campus) at the University of Johannesburg offers quality undergraduate and postgraduate programmes, cutting edge research facilities and is home to internationally acclaimed scientists.

Our varied and modern research areas, extensively equipped laboratories and high calibre staff members attract the top talent globally. We regularly publish articles in high impact international peer-reviewed journals, which attract a high number of citations.

Research

- Areas of research: Astrophysics, Particle Physics, Condensed Matter Physics, Theoretical Nuclear Physics, High Energy Physics, Atmospheric Physics and Physics Education.
- Home to four National Equipment Programme (NEP) apparatus funded by the South African National Research Foundation (NRF) allowing world class experimental research facilities within the Department.
- The majority of our academic staff are NRF rated scientists.
- The Centre for Astro-Particle Physics (CAPP) is the home of research on Gamma-Ray Astrophysics, Neutrino Astrophysics, Neutrino Physics and Gravitational Wave Physics.
- UJ Physics is the only Fermi Large Area Telescope (LAT) member on the African continent.

Teaching and Learning Activities

Programmes offered in the Department include:

- BSc: Physics
- BSc Honours: Physics
- MSc: Physics
- PhD: Physics

Offer 12 first year physics modules that are tailored to the specific needs and requirements of our students.

Awards and Accolades

- UJ 2019 Postdoctoral Research Fellows Excellence Award.
- Faculty award for the best department in 2018.
- Chancellor Medal for the most meritorious MSc dissertation in the 2018 academic year.
- Vice Chancellor's award for excellence in teaching.
- Award from Prince Edward for outstanding commitment and dedication by a facilitator in Physical Science.
- Faculty of Science's community engagement award.
- Faculty of Science's teaching award.
- Faculty of Science's emerging researcher award.
- Staff and student awards at national and international conferences.
- First woman Full Professor in Physics in the history of UJ/RAU.
- Previously led by the only female Head of a Physics Department in South Africa.
- First Rwandan woman with a PhD in Physics.
- First African woman with a PhD in strongly correlated matter.

International Rankings

- 2019 QS World University Rankings by Subject: Physics & Astronomy ranked in the 451-500 bracket globally and fourth nationally. This marked the first time that UJ was ranked for this particular subject.
- 2020 US News & World Report's Best Global Universities Rankings (BGUR) by subject: UJ Physics ranked number 267 worldwide, and 3rd in South Africa and 3rd in Africa (was number 319 in 2019, 3rd in South Africa and 5th in Africa).
- 2018 & 2017 Global Ranking of Academic Subjects by Shanghai Ranking Consultancy (ARWU): UJ ranked in the 301-400 band globally (out of 500 ranked institutions) in Physics; UJ was one of four South African universities ranked and in joint second position in the country.

Community Engagement Activities

- School visits and hosting of high school learners to promote interest in Physics.
- Undergraduate mentoring.
- Science week activities at Soweto Science centre.
- Regular articles in "The Conversation Africa".
- Women in science art competition.
- Physics bowl.

International collaborations with:

- India, Bangalore, Indian Institute of Astrophysics
- France, Caen, CRISMAT
- France, Paris, SACLAY
- Russia, Sarov, Sarov Physics and Technology Institute
- Israel, Tel Aviv, Tel Aviv University Department of Physics and Astronomy
- Australia, Perth, Curtin University
- Italy, Padova, INFN/University of Padova
- Canada, Winnipeg, University of Manitoba
- France, Gif-sur-Yvette, CEA/Saclay
- Japan, Sendai, Tohoku University; Japan, Tokyo, RIKEN
- University of California San Diego, San Diego, USA
- Brazil, Sao Paulo, UFSCar
- Germany, Dresden, Max Planck Institute for Chemical Physics of Solids
- Austria, Vienna, Institute of Solid state Physics, University of Technology
- Russia, Moscow, Lomonosov Moscow State University
- University College Dublin, UK
- University of Amsterdam, The Netherlands
- European Spallation Source, Lund, Sweden
- University of Melbourne, Australia
- Ohio State University, USA
- University of Modena and Reggio Emilia, Italy
- France, Brest, Universite de Bretagne Occidentale (UBO) (MoU)
- France, Laboratoire de Physique de la Matiere Condensee et Nanostructures, Villeurbanne
- France, University of Lyon (MoU)
- UK, Edinburgh University, Centre for Science at Extreme Conditions and School of Chemistry
- TASC INFM Laboratory, Italy
- Turkey, Canakkale, Canakkale Onsekiz Mart University
- India, Nainital, Aryabhata Research Institute of Observational Sciences
- Italy, University of Genova, Dept. Pure and Industrial Chemistry
- Slovak Republic, Kosice, University of Presov and Slovak Academy of Science

- UK, Oxford, ISIS Pulsed Neutron and Muon Scattering Facility
- UK, St Andrews, School of Physics & Astronomy, University of St Andrews
- USA, Goleta, Los Cumbres Observatory
- USA, Santa Barbara, Dept. Physics, University of California at Santa Barbara (UCSB)
- USA, Irvine, Dept. Physics & Astronomy, University of California at Irvine
- USA, Lubbock, Dept. Physics, Texas Tech
- Germany, Heidelberg, University of Heidelberg
- Australia, Sydney, Australian National University
- Sweden, Onsala, Onsala Radio Observatory, Chalmers University
- University of Salerno, Italy
- Max Planck Institute for Solid State Research, Stuttgart, Germany

For more information about the Department and CAPP please visit:

<https://www.uj.ac.za/faculties/science/physics>
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