Professor Tebello Nyokong is the 2009 L’Oréal-UNESCO Laureate for Africa and the Arab States. Nyokong is professor of medicinal chemistry and nanotechnology at Rhodes University. She will receive the award for her work on harnessing light for cancer therapy and environmental clean-up. Photo: Cathy Pinnock.
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Nyokong is the top woman scientist in Africa

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Steven Lang

Prof Tebello Nyokong of Rhodes University has been nominated to receive an annual L'Oréal – Unesco Award for Women in Science. At a special briefing in Sandton yesterday, it was announced that Nyokong will receive the honour as winner for both African and Arab states. In conjunction with World Science Day yesterday, the jury announced the names of the five exceptional women scientists from around the world to receive this year's awards.

This year's theme is "Physical Sciences", and the laureates were selected through nominations by a network of nearly 1 000 members of the international scientific community.

Over the last 10 years, the Women in Science Awards have recognised 52 outstanding women from across the world for their scientific research. Prof Jennifer Thompson from the University of Cape Town and Prof Valerie Mizrahi from Wits University are the only two previous laureates from South Africa.

Diverse in origin, determined in nature, and extraordinary in intellect, the 2009 laureates reflect the programme's mission: change the face of science and support the advancement of women in the science. The awards ceremony will take place on 5 March 2009 at Unesco in Paris. Each laureate will receive $100 000 in recognition of her contribution to science.

Nyokong, a professor of medical chemistry, is no stranger to high profile awards. In August, she won the City Press/Rapport Prestige Award for her groundbreaking research in cancer diagnosis and treatment.

In 2004 she won the SABC 2/Shoprite Checkers Woman of the Year Award in the Science and Technology category and in 2005 she was given the Order of Mapungubwe by former state president Thabo Mbeki.

Finding African solutions to cancer treatment has led Nyokong's research into photodynamic therapy. This alternative to chemotherapy uses a dye which can kill cancer cells when exposed to red laser light. Nyokong is excited because the Centre for Scientific and Industrial Research (CSIR) has agreed to undertake pre-clinical trials using her drugs which are specifically suited to Africans who are exposed to extreme sunlight.

The other area of her research is in detecting disease-causing agents in food, water and blood on the sensitive nanoscale. This will help with disease prevention of oesophageal cancer, for example. Nyokong's dream is to have a cancer diagnosis or treatment product in the market, but realistically she says that this could take a very long time.

The five laureates for the 2009 Women in Science awards are:

- Africa and the Arab States: Prof Tebello Nyokong, professor in the Department of Chemistry at Rhodes University in South Africa, for her work in harnessing light for cancer therapy and for environmental clean-up.
- Asia-Pacific: Prof Akiko Kobayashi, professor and chair of the Department of Chemistry, College of Humanities and Sciences at Nihon University in Japan, for her contribution to the development of molecular conductors and the design and synthesis of a single-component molecular metal.
- North America: Prof Eugenia Kumacheva, professor in the Department of Chemistry at the University of Toronto in Canada, for the design and development of new materials with many applications including targeted drug delivery for cancer treatments and materials for high density optical data storage.
- Europe: Prof Athene Donald, professor of experimental physics at the Cavendish Laboratory in the Department of Physics at the University of Cambridge in the United Kingdom, for her work in unravelling the mysteries of the physics of messy materials, ranging from cement to starch.
- Latin America: Prof Beatriz Barbuy, professor at the Institute of Astronomy, Geophysics and Atmospheric Sciences at the University of São Paulo in Brazil, for her work on the life of stars from the birth of the universe to the present.

Created in 1998, the L'Oréal – Unesco Awards for Women in Science were established as the first international awards dedicated to women scientists around the world. More than 10 years and 57 laureates later, the programme is a benchmark of international scientific excellence, and an invaluable source of motivation, support, and inspiration for women in the scientific field. The awards alternate each year between Life Sciences and Physical Sciences, recognising work that addresses major challenges in modern science. The laureates serve as role models for future generations, encouraging young women around the world to follow in their footsteps.

This year's jury was made up of 17 eminent members of the international scientific community from five continents, with Nobel Prize in Chemistry 1998 recipient Prof Ahmed Zewail as the jury president, professor Christian de Duve, who received the Nobel Prize in Medicine 1974, as the founding president of the awards, and Koichiro Matsuura, director general of Unesco, as honorary president.