NIGERIAN HOT SPRINGS ARE NOT JUST FOR RELAXATION - THEY ALSO CONTAIN USEFUL INDUSTRIAL ENZYMES

Dr Folasade Olajuyigbe
IFS Grantee F/3775
Department of Biochemistry
School of Sciences
Federal University of Technology, Akure
Nigeria

Enzymes are biocatalysts that have all kinds of commercial and industrial applications. One group, alkaline proteases, are used in basic and applied areas of research and manufacturing processes, such as those pertaining to the food, beverage, pharmaceutical, detergent, leather processing, and peptide synthesis industries. The detergent industry in particular has a need for such enzymes which are stable at high temperatures.

Thermostable enzymes are advantageous in many industrial applications because higher processing temperatures can be used which make the reactions go at faster rates with reduced incidence of microbial contamination.

Dr Folasade Olajuyigbe's research career took off through winning her first IFS grant in 2004 and she consequently set about looking for bacteria in Nigerian hot springs which produce potentially useful heat-loving enzymes with unique characteristics. And she found them! She purified and characterised one such thermostable alkaline protease (from *Bacillus licheniformis)* which was very stable under both acidic and alkaline conditions. With her second IFS grant, which she obtained in 2011, she has gone a long way to optimise production of the thermostable alkaline protease from hot springs using cheap and easily available substrates. Now Dr Olajuyigbe is going one step further - she plans to isolate the genes that code for the novel enzymes for over-expression in heterologous hosts which will generate the high yields required by industries.

Dr Olajuyigbe's career, given the quality of her applied research, has resulted in her receiving several prestigious international awards for her achievements. She is presently a Senior Lecturer at the Federal University of Technology, Akure, Nigeria.