

**Centre for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre)**

**and**

**Department of Science & Technology (DST),  
Republic of South Africa**

.....

**NAM S&T Centre – DST (South Africa) Training Fellowship on Minerals Processing & Beneficiation (2016)**

**Announcement**

In line with its resolute efforts to promote South-South and North-South cooperation in science and technology, the Centre for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre) has instituted a number of Fellowship schemes that are aimed at supporting the deserving young scientists in the developing countries to establish closer linkages with the Centres of Excellence located in various countries, thereby facilitating the affiliation of these researchers with the academic and scientific institutions such as the Leibniz Centre for Tropical Marine Ecology (ZMT) in Bremen, Germany, the International Centre for Chemical and Biological Sciences (ICCBS), H.E.J. Research Institute of Chemistry in Karachi, Pakistan, or the Central Food Technological Research Institute (CFTRI) in Mysore, India, etc. The Centre has also initiated another Fellowship scheme in 2014 jointly with the Department of Science and Technology (DST), Government of South Africa [[www.dst.gov.za](http://www.dst.gov.za)] to provide opportunities for training on Minerals Processing & Beneficiation. The objective of the Training Fellowship is to address the skills gap in the minerals beneficiation value chain and enable the scientists / technologists from the member countries of the NAM S&T Centre [lists of these countries is available in the Centre's website]. to update their knowledge for benefitting from their countries' mineral resources by exposing themselves to new technologies in the area of Mining and Minerals. The selected Fellows are hosted and attached to MINTEK, South Africa ([www.mintek.co.za](http://www.mintek.co.za)) for exposing them to minerals processing technologies and undergo in-service training attached to the existing MINTEK programmes. Twenty Fellowships are available every year for a maximum duration of three months.

Applications are invited in the prescribed format for the Joint NAM S&T Centre – DST (South Africa) Training Fellowship on Minerals Processing & Beneficiation for the year 2016. Under this scheme, DST (South Africa) will provide a subsistence allowance @ of US\$ 300 per month, in South African Rand, for meals and out-of-pocket expenses in South Africa for the duration of the Fellowship. Accommodation will be covered by the government of South Africa.

**The sending country or the candidates themselves will have to arrange for their international travel to and from South Africa.**

Copies of the guidelines for the Fellowship and the application form are **appended below**. Completed applications recommended by the parent institutions of the applicants may be submitted directly to Mr. Selby Modiba and Ms. Palesa Motsoeneng at [Selby.Modiba@dst.gov.za](mailto:Selby.Modiba@dst.gov.za); [Palesa.Motsoeneng@dst.gov.za](mailto:Palesa.Motsoeneng@dst.gov.za) DST, South Africa by **15 January 2016**.

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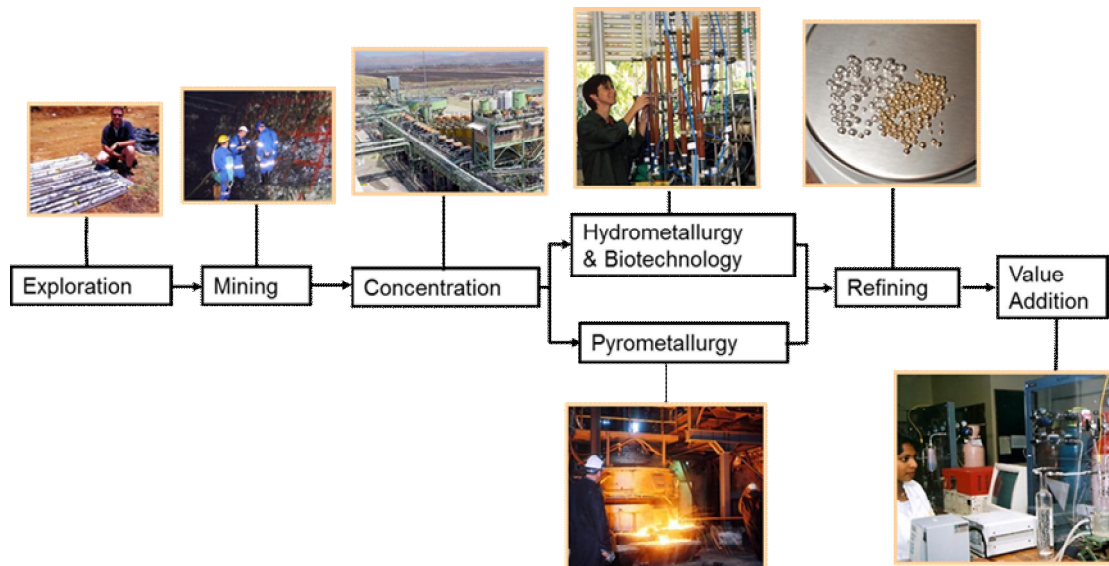
**NAM S&T CeNTre – DST (SouTh AfricA) TrAining fel l owShip**  
**on Mineral s Processing & Beneficiation (2016)**

**GUIDELINES AND APPLICATION FORM**

**I. Background**

Mineral resource beneficiation is an important value-creating activity in the developing countries, and mining and consumption of minerals is indispensable to improve the quality of life of the people.

Most of the 47 member countries of the NAM S&T Centre - Afghanistan, Algeria, Argentina, Bangladesh, Bhutan, Bolivia, Burkina Faso, Cambodia, Colombia, Congo, Cuba, Cyprus, Egypt, Ethiopia, Gabon, Gambia, Guyana, India, Indonesia, Iran, Iraq, Jordan, Kenya, Korea (DPR), Lebanon, Malaysia, Malawi, Malta, Mauritius, Myanmar, Nepal, Nicaragua, Nigeria, Pakistan, Peru, Serbia, Sri Lanka, South Africa, St. Lucia, Syria, Tanzania, Togo, Uganda, Venezuela, Vietnam, Zambia, Zimbabwe - have significant natural and mineral resources. The common challenge among these countries however is the lack of expertise to develop these minerals into products that would contribute to their countries' economic development. This is due to the lack of skills in specialised areas that would enable the minerals beneficiation value chain, for example, from extraction to manufactured products as indicated in the Figure below.



The proposal for the capacity building programme in Minerals Processing and Beneficiation came as a result of the workshop hosted by the Department of Science & Technology (DST), Government of South Africa in collaboration with the NAM S&T Centre in September 2012.

The recommendations made in this workshop laid emphasis on the development and implementation of sustainable and appropriate minerals development, processing and beneficiation policy and promotion of human resource development in this area.

In order to help fill the skills and capability gaps in the minerals beneficiation value chain, DST (South Africa) has proposed to initiate a Training Fellowship on Minerals Processing and Beneficiation for the scientists, technologists and policy makers of the NAM S&T Centre's member states, which will also indirectly address common challenges of sustainable economic development and growth faced by the NAM S&T Centre member countries and other developing countries. This initiative will develop capacity building in these countries through exposure to new technologies in the areas of mining and minerals.

## **II. Objectives**

The overall objective of the Fellowship scheme is to provide insights on the entire minerals processing and beneficiation chain to allow the Fellows to influence policies and establish structures in their countries to address the related challenges. This programme will further provide the Fellows with the knowledge on Minerals Processing and Beneficiation and expose them to the basic principles and relevant developments in the field so that they can apply modern techniques for understanding process operation and understand the impact of these technologies on the environment and processes for their mitigation.

This programme will bear direct and indirect benefits for the Fellows from the member countries of the NAM S&T Centre and the host country, South Africa, through creation of networks and exposure to new developments in mineral processing and beneficiation. This initiative will further profile South Africa as the preferred destination for advanced research and development in minerals processing and beneficiation.

## **III. Programme Contents**

The programme will focus on the following three areas:

### **1. Policy Training**

The training is meant for policy makers and government officials to gather information on how to drive policy formulation and implementation in the Minerals Processing and Beneficiation field and assist the trainees in their home countries in this regard. The training materials will also include sustainable mining. The outcomes of the training will cover:

- Policy landscape in Minerals Processing and Beneficiation.
- Share best-principle on Minerals Processing and Beneficiation.
- Develop a set of guidelines and tool kit for minerals processing and beneficiation.

### **2. Processing Options/Technologies**

This training is meant for professionals already working in this field with limited exposure to modern, advanced and new ways of minerals processing and beneficiation, which include:

#### *Basic Minerals and Mining*

This will expose the trainees to basic mining and minerals practices, theory, science, technology and application of extracting and processing minerals from a naturally occurring environment. It will also include the processing of minerals for value addition and responsible care in handling of the waste outputs.

### *Advanced Minerals Processing and Mining*

This will expose the trainees to advanced ways of minerals processing including practical experimentation with modern machinery.

### *Analytical facility*

The trainees will also get an opportunity to be taught and be involved in the process to test, inspect and verify minerals components including the usage of inorganic analytical chemistry laboratories and state-of-the-art instruments employed in minerals processing.

### *Advanced Beneficiation*

In this phase, the trainees will be exposed to the beneficiation chain, which will include access to laboratories, technologies and facilities employed in advanced beneficiation.

### **3. Beneficiation options/or Technologies**

This training will provide the participants with beneficiation options to suit their requirement and the level of processing advancement in their respective countries.

## **IV. Number of Fellowships**

Twenty (20) scientists, technologists and professionals from the NAM S&T Centre's member countries will be selected under the Programme every year (for the next three years 2015 to 2017) to get affiliated with the South African host institution.

## **V. Duration and Structure of Programme**

The selected Fellows will be hosted and attached to MINTEK ([www.mintek.co.za](http://www.mintek.co.za)) for a period of three months being exposed to MINTEK ways of minerals processing and undergoing in-service training under the existing MINTEK programmes. The Fellows will be attached to an existing MINTEK project relevant to their scientific background and interests.

## **VI. Eligibility**

- Applicant should possess at least a Master's Degree in any relevant science subject or an equivalent degree in engineering or technology.
- Applicant should be working in a Government Ministry, department, agency or institution or a private industry dealing with minerals processing and beneficiation programmes in his/her home country. The application should be endorsed by the Head of his/her institution confirming that if selected, he/she will be sanctioned leave for the period of the Programme and will join his/her duties back in the organisation on completion of the Fellowship in South Africa.

## **VII. Financial and Other Terms**

- DST, South Africa as the host country will provide local hospitality for the Fellows for the duration of the training. A subsistence allowance @ of US\$ 300 per month will be paid to the selected Fellow for meals, miscellaneous expenses and local transportation. Accommodation and daily transportation to and from the MINTEK will be covered by DST of South Africa.
- International Airfare will be borne by the Fellow or his/ her sending government / organisation.



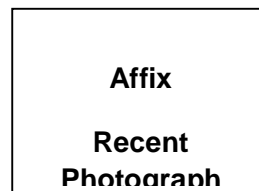
**CENTRE FOR SCIENCE AND TECHNOLOGY  
OF THE NON-ALIGNED AND OTHER DEVELOPING COUNTRIES  
(NAM S&T CENTRE)  
and  
DEPARTMENT OF SCIENCE & TECHNOLOGY (DST),  
REPUBLIC OF SOUTH AFRICA**

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**NAM S&T CeNTre – DST (SouTh AfricA) TrAining FeLl owship  
on Mineral s Processing & Beneficiation (2016)**

**APPLICATION FORM**

(Please TYPE or use BLOCK capitals; No column should be left blank.)



**SECTION A  
(To be filled in by the Applicant)**

1. Name (Dr/Mr/Mrs/Ms): \_\_\_\_\_  
(as in Passport)
2. Designation (Position held) \_\_\_\_\_
3. Nationality: \_\_\_\_\_
4. Date of Birth: \_\_\_\_\_ Place of Birth (City) \_\_\_\_\_ (Country) \_\_\_\_\_
5. Passport No. \_\_\_\_\_ Place of issue: \_\_\_\_\_  
Date of Issue: \_\_\_\_\_ Valid up to: \_\_\_\_\_  
(Please attach a copy of the Passport)
6. Full Address (Home): \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_  
Mobile Phone: \_\_\_\_\_
7. Name of the Parent Institution (employer): \_\_\_\_\_  
Full Address (Office): \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_
8. Academic Qualifications:  
Highest Degree: \_\_\_\_\_ Year of Award: \_\_\_\_\_  
University: \_\_\_\_\_ Field of Study: \_\_\_\_\_

(Please attach copies of Degree Certificates.)

- 9. Brief Curriculum Vitae, including Professional and Research Experience (to be attached on a separate sheet).

Signature of applicant: \_\_\_\_\_

Date \_\_\_\_\_

**SECTION -B**

**RECOMMENDATION OF PRESENT EMPLOYER**

(The Applicant must get the application recommended by the Head of his/her Present Employer)

The application of Dr./Mr./Mrs./Ms.....for the NAM S&T Centre – DST (South Africa) Training Fellowship on Minerals Processing & Beneficiation (2016) in South Africa is recommended for consideration. If selected, Dr./Mr./Mrs./Ms. ....will be sanctioned leave for the Fellowship period and will join his/her duties back in this Organization on completion of the Fellowship period in South Africa.

Name of the recommending officer (in Full) \_\_\_\_\_

Designation: \_\_\_\_\_

Place: \_\_\_\_\_

Date: \_\_\_\_\_

Signature:

Seal:

**CheCk List for the enClosures to be attAched:**

- i) Copy of Passport
- ii) Copies of Degree Certificates
- iii) Brief Curriculum Vitae (including Professional and Research Experience).