

**International Symposium
on
STRATEGIC INTERVENTIONS TO MITIGATE THE
HAZARD OF LIGHTNING**

**Lusaka, Zambia
11-13 August 2015**



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



**African Centres for Lightning and Electromagnetics
and
National Center for Lightning and Electromagnetics - Zambia**

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1. INTRODUCTION

Although lightning is a natural phenomenon with global presence, it remains an underrated weather hazard. Lightning can cause injuries and deaths for people and animals plus costly infrastructural damage and downtime of crucial equipment. The impact of lightning in most African regions is far worse than the rest of the world for many reasons. Parts of Central Africa have the highest lightning density (lightning strikes/km²/year) in the world. Most of the population is at high risk because safe shelters are not available, they are often employed in outdoors work, rapid high-quality medical care may not be available, and there is a general lack of knowledge about lightning and how to avoid injury. In a country like Zambia, isolated efforts have been made to protect electronic/ electrical equipment, but little is being done to protect human beings and livestock. To consider various aspects of lightning at regional level in Africa, the African Centres for Lightning and Electromagnetics (ACLE) has been set up in Kampala, Uganda, with associated groups in several African countries, including Zambia.

The Centre for Science and Technology of the Non-aligned and Other Developing Countries (NAM S&T Centre) and the African Centres for Lightning and Electromagnetics announce the organisation of an International Symposium titled 'Strategic Interventions to Mitigate the Hazard of Lightning' in Lusaka, Zambia during 11-13 August 2015, which will be hosted by the National Center for Lightning and Electromagnetics of Zambia. The centre is currently being hosted by the Zambia Air Services Training Institute (ZASTI). The main objective of the Symposium is to bring the stakeholders at national and regional levels together, with participation of learned experts, to share experience and work together in a scientific manner for chalking out strategic interventions to mitigate the lightning hazard.

2. OBJECTIVES OF THE SYMPOSIUM

The International Symposium will provide a platform for the participants to learn about lightning hazards related topics and insights into strategic interventions (what has been done) and on lightning protection and safety in general.

The expected outcomes are a database on current state of the challenge of lightning in different countries, a database on the current status of lightning protection in various countries/ industries and a roadmap on the way forward for the purpose of developing appropriate systems / interventions to decrease deaths, injuries and property damage from lightning.

3. PROGRAMME OF THE WORKSHOP

A tentative programme of the Workshop is given below:

DATE	PROGRAMME	
Monday, 10 th August 2015	Arrival of Delegates at Lusaka, Zambia	
Tuesday, 11 th August 2015	Inauguration	Technical Sessions
Wednesday, 12 th August 2015	Technical Sessions	Technical Sessions
Thursday, 13 th August 2015	Technical Sessions Discussion and Adoption of Resolution	Field Visits
Friday, 14 th August 2015	Departure of Delegates	

A detailed Session-wise Programme will be made available before the International Symposium. ACLE-Zambia is in the process of arranging for French/English translation for the meeting.

4. VENUE

Protea Hotel, Lusaka

5. RESOURCE PERSONS AND TOPICS

The following Resource Persons have been invited for the International Symposium:

1. Ian Jandrell, PhD, Dean, College of Engineering, University of Witswatersrand, South Africa
2. Ronald Holle, International Expert on At-Risk Populations, USA
3. Others to be announced

Topics for expert / tutorial sessions are:

1. Weather Patterns across Africa – Jean Blaise Ngamini, ACLE Executive Committee
2. Lightning Physics – Ian Jandrell, PhD, Dean, College of Engineering, University of Witswatersrand, South Africa
3. Lightning Protection – Chandima Gomes, PhD, ACLE Executive Committee
4. Mechanisms of Lightning Injury and Lightning Safety – Mary Ann Cooper, MD, ACLE Executive Committee
5. The State of Lightning Injury Data around the World and Sources of Data – Ronald Holle, world authority on studying the demographics of lightning injury.
6. Working with Government Organizations and Private Companies to decrease Deaths, Injuries and Property damage from Lightning – Richard Tushemereirwe, ACLE Executive Committee
7. Others to be announced

6. ABOUT THE ORGANISERS

6.1 NAM S&T CENTRE

The Centre for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre; www.namstct.org) is an inter-governmental organisation with a membership of 47 countries spread over Asia, Africa, Middle East and Latin America. The Centre was set up in 1989 in New Delhi, India in pursuance of the recommendations of various NAM Summit meetings for the promotion of South-South cooperation in science and technology. The Centre undertakes a variety of programmes, including organisation of workshops, symposiums, meetings and training courses and implementation of collaborative projects. It also offers short-term research fellowships to scientists from developing countries in association with the Centres of Excellence in various countries. These activities provide opportunity for scientist-to-scientist contact and interaction; familiarising participants on the latest developments and techniques in the subject areas; identification of the requirements of training and expert assistance;

locating technologies for transfer between the members and other developing countries, dissemination of S&T information etc. The Centre also publishes scientific books in different subjects. In addition, the Centre encourages academic-R&D-industry interaction in the developing countries through its NAM S&T-Industry Network.

6.2 AFRICAN CENTRES FOR LIGHTNING AND ELECTROMAGNETICS

The African Centres for Lightning and Electromagnetics (ACLE; www.ACLENet.org) is a pan-African network dedicated to decreasing deaths, injuries and property damage from lightning across Africa. ACLE is the result of NAM S&T lightning conferences held in Colombo, Sri Lanka in 2007, Kathmandu, Nepal, in 2011, and Kampala, Uganda, in 2013. Makerere University Business School of Uganda agreed to house ACLE headquarters in July 2013. ACLE has received support from internationally recognized lightning researchers and educators who agreed to serve as Research Advisors and has an Executive Committee made up of experts in meteorology, medicine, government, lightning physics, and injury prevention.

Among ACLE's many far-reaching goals is the formation of national or regional centers such as ACLE-Zambia throughout Africa to address the risk of lightning injury, death and property damage through the use of technology, education, and research.

6.3 NATIONAL CENTER FOR LIGHTNING AND ELECTROMAGNETICS IN ZAMBIA (ACLE-ZAMBIA)

The National Center for Lightning and Electromagnetics in Zambia (ACLE-Zambia) is an associate body of the African Centres for Lightning and Electromagnetics (ACLE). ACLE-Zambia became the first national center to be formed when the Zambia Air Services Training Institute (ZASTI) agreed to host the center vide its letter dated 4th November 2014. The last official step in consummating ACLE-Zambia is the completion of the memorandum of understanding that is currently under consideration by ZASTI management.

ACLE-Zambia recognises the significance of educating Africa's future lightning experts and has recruited two electronics diploma students who wish to pursue graduate training in lightning research. Working out of the office space supplied by ZASTI, ACLE-Zambia has written to companies and organisations that are stakeholders in the matters of lightning protection requesting their participation and support to the Center. Among ACLE-Zambia's other goals are:

- Reduce human and livestock lightning fatalities, injuries and property damage
- Help upgrade the electronics technology programme to have an inclination towards preventive maintenance other than repair and maintenance

7. PARTICIPANTS

The International Symposium is primarily designed for scientists, engineers, public health specialists, technologists and technicians from different countries and industries across Africa, to discuss the challenge of lightning, to formulate plans for data gathering on injuries, deaths and damage, and for education to decrease deaths, injuries and property damage from lightning.

8. SUBMISSION OF APPLICATION

Scientists and professionals desirous of participating in the International Symposium, **excepting those from Zambia**, should submit their Nomination Form (**enclosed**) directly to the NAM S&T Centre as early as possible, but latest by **6th July 2015**.

The applications from Zambia however should be submitted only to the local organisers in ACLE-Zambia (contact details given at the end of this Brochure), and NOT to the NAM S&T Centre.

The Nomination Form should be completed in all respects, typewritten or in clear handwriting in capital letters, and no column should be left blank.

The following documents must be submitted along with the Nomination Form:

- i) An extended (about 2 pages) abstract (**in MS Word format**) of the paper that would be presented at the Workshop
- ii) A short (**maximum two pages**) CV (**in MS Word format**)
- iii) Copy of the relevant pages of the passport (**i.e. pages showing identity, photo and date of expiry of the passport**)

PLEASE Note that documents referred to under (i) and (ii) above must be in MS Word Format; .Pdf or image files will NOT be accepted.

Hard copies of the Nomination Form and above attachments are NOT required to be submitted.

9. PRESENTATION OF PAPERS

Each participant will be required to present a paper on any of the following themes appropriate to the International Symposium:

THEMES FOR PAPERS:

- i. Lightning Challenge in various countries / industries
- ii. Strategic interventions (What has been done) on Lightning
- iii. Lightning protection and safety

10. PUBLICATION AS A FOLLOW UP OF THE SYMPOSIUM

A publication edited by one or more international experts and based on the papers presented during the International Symposium and also containing papers contributed by other invited experts in the field will be brought out in the form of a book as a follow up of this scientific event. Therefore all participants are required to submit the manuscripts of their full papers in MS-word format well in advance, but at least 15 days before the commencement of the International Symposium.

11. LOCAL HOSPITALITY AND TRAVEL

The Zambian hosts will provide free local hospitality, including accommodation and meals, to all the foreign participants and invited foreign resource persons from 10th August 2015 (Noon) to 14th August 2015 (Noon) i.e. for 4 nights. Free transport will also be provided to the participants for their travel from/to the airport to/from the place of their stay and for visits in connection with the symposium programme.

****PLEASE NOTE THAT** participants will have to make their own arrangements for stay beyond these dates and therefore they are requested to book their flights accordingly.

12. FINANCIAL ARRANGEMENTS FOR TRAVEL

This is being conveyed separately to each member country of the NAM S&T Centre and other developing countries.

13. ENTRY FORMALITIES AND IMMIGRATION

Participants of the International Symposium must be in possession of a current passport for entry into Zambia which should remain valid at least for the next six months after the proposed date of departure from Zambia.

14. ABOUT LUSAKA AND ITS SURROUNDINGS:

Lusaka is the capital and largest city of Zambia. One of the fastest-developing cities in Southern Africa, Lusaka is located in the southern part of the central plateau at an elevation of about 1,279 metres (4,195 feet). The city is the centre of both commerce and government in Zambia. The main attractions of Lusaka include Lusaka National Museum, Kabwata Cultural Village, the Political Museum, the Zintu Community Museum, the Freedom Statue, the Zambian National Assembly, the Agricultural Society Showgrounds (known for their annual agricultural show), the Moore Pottery Factory, the Lusaka Playhouse theatre, the Cathedral of the Holy Cross, a cenotaph, a golf club, the Lusaka Central Sports Club, and the zoo and botanical gardens of the Munda Wanga Environmental Park. The city is also home to the University of Zambia. Along Great East Road are the two largest shopping malls in Zambia, Arcades shopping mall and Manda Hill shopping mall.

15. CURRENCY:

The Zambian Kwacha is the currency of Zambia. The currency code for Kwacha is ZMK, and the currency symbol is ZK. Currently, 1 USD = 7699.99 ZMK (The rebased currency)

16. OTHER USEFUL INFORMATION:

Climate: Primarily due to its high altitude, Lusaka features a humid subtropical climate with the average temperature ranging between 9.2°C (48.6°F) to 26.5°C (79.7°F) in the month of August.

Standard Time: 2 hours ahead of GMT

Voltage: 230 volts 50 Hz

GSM Frequency: 900 MHz

International Dialling Code: +260

Internet Domain: zm

NOTE

- ***The governments / institutions of all foreign participants or the participants themselves will be required to bear the following costs:***
 - *All expenses in the home country incidental to travel abroad, including expenditure for passports, required medical examinations, vaccinations and miscellaneous expenses such as internal travel to the airport of departure in the home country.*

- *Salary and other related allowances for the participants during the period of the Workshop.*
- *Cost of medical insurance to cover the period of participation in the workshop.*
- ***The organisers will not assume responsibility for the following expenditure in connection with the participant's attendance in the Workshop:***
 - *Expenses incurred with respect to any insurance, medical bills or hospitalisation fees.*
 - *Compensation in the event of death, disability or illness of participants.*
 - *Loss of personal belongings or compensation for damage caused to them by climatic or other conditions.*
 - *Other costs, including airport tax and excess baggage.*

CONTACT DETAILS

NAM S&T CENTRE

Prof. Dr. Arun P. Kulshreshtha

Director General,

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(NAM S&T Centre),*

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Mr. M. Bandyopadhyay

Senior Expert & Administrative Officer

Address, Tel. and E-mail: (O) as above.

FOR ZAMBIAN APPLICANTS

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**CENTRE FOR SCIENCE AND TECHNOLOGY OF THE
NON-ALIGNED AND OTHER DEVELOPING COUNTRIES**

**INTERNATIONAL SYMPOSIUM
ON
STRATEGIC INTERVENTIONS TO MITIGATE THE HAZARD OF LIGHTNING
LUSAKA, ZAMBIA
11 – 13 AUGUST 2015**

NOMINATION FORM

PLEASE **TYPE** OR USE **BLOCK** CAPITALS;
NO COLUMN SHOULD BE LEFT BLANK)

Please affix
your
scanned
photograph

SECTION –A

(To be filled in by the nominee)

- 1 Name (Prof/Dr/Mr/Mrs/Ms):
(As in Passport)
- 2 Father's/Spouse Name:
- 3 Designation (Position held):
- 4 Nationality:
- 5 Date of Birth: Place of Birth (City) (Country).....
- 6 Passport No:Place of issue:
Date of Issue: Valid up to:
(Please attach copies of the relevant pages of your Passport)
- 7 Name of the Parent Institution (Employer):
Full Address (Office):
.....
Phone: Mobile:
Fax: E-mail:
- 8 Full Address (Home):
.....

Phone: Mobile:

Fax: E-mail:

9 Educational Qualifications: Highest Degree.

Year of Award: University:

Field of Study:

10 Brief Biodata (1-2 pages)

(To be attached on separate sheet, **in MS Word Format**)

11 What in your opinion qualifies you for the participation in this Training Programme?

(To be attached on separate sheet)

12 Brief Abstract of your paper (1-2 pages) proposed to be presented in the Training Programme.

(To be attached on separate sheet, **in MS Word Format**)

Date: Signature:

SECTION -B

ENDORSEMENT BY NOMINATING AUTHORITY

(The Applicant in a member country of the NAM S&T Centre may get the following endorsement signed by the Focal Point of the Centre in his/her country, *if he/she wishes to take advantages accrued to the official nominee of the country*. For the list of member countries and names/addresses of the Focal Points please visit Centre's website www.namstct.org)

Signature:

Name (in full):

Designation:

Date:

SEAL