



**"Reviving the African Physical Society - A
Tribute to Professor Francis Allotey" at KIGALI**



Tribute on Professor Francis Kofi Ampenyin Allotey 9th August, 1932- 2nd November, 2017

By

Prof. Paul Kingsley buah-bassuah

Laser and Fibre Optics Centre

Department of Physics

University of Cape Coast, Cape Coast. GHANA

Prof. Paul Kingsley Buah-Bassuah (affiliations and experience)

- Laser and Optical Physicist, Professor.
- Senior Associate, Abdus Salam International Centre for Theoretical Physics ICTP, Trieste, Italy. 2005 to present.
- Fellow, The International Society for Optical Engineering (SPIE) 2008
- Fellow, Ghana Academy of Arts and Sciences August, 2011
- Fellow, Africa Academy of Sciences December, 2017
- Member, African Physical Society 2010
- Member, Optical Society of America (OSA)
- Member, Ghana Commission of Optics 1993 to present
- Course Director, ICTP-LAMNETWORK Workshops in Africa 1991-2004
- Member of Board of Directors, African Laser Centre. (ALC) South Africa. 2005 to 2014
- **Dean, School of Physical Sciences August 2011 – Aug,2012**
- **Council Member, Council for Scientific and Industrial Research CSIR, Accra Aug.,2017 –Aug, 2020**
- Supervised 7Ph.D. and 26 M. Phil Graduates.

What Prof. Allotey said generally

In his diary in 1960 when doing his Ph.D, He wrote:

God.... Help me to succeed in my endeavour and career and when successful, I will use my achievement and success to help my family, country and the world and to serve humanity.

This pledge was fulfilled in his lifetime as he helped his community and mentored a lot.

From the President Republic of Ghana:

1. Prof Allotey was a phenomenal inspirer of young people to take to the learning of Mathematical science.
2. He was not just an embodiment of what it is to be scientist, he was also an embodiment of what it is to be called Human.

Role of Prof. Allotey as ICTP Council Member and a mentor

- serving the interest of not just Ghana, but the entire African continent.
- in the early 1980's by bringing young scientists and University Lecturers from developing and least developed countries to the Centre for summer and Winter colleges.
- His role for ICTP to sponsor my Ph.D in Firenze, Italy.
- Recommended the establishment of Laser Center at University of Cape Coast.
- Using Ghana and other Societies to get IYL celebrated.
- Helped a lot of africans in their academic progression and nominated them for ICTP Associates and other Academies.
- I admired the man for his simplicity, calmness, tenderness and ever preparedness.
- Encouraged young scientists to aim high.
- Had passion for helping students in their studies and master their talents

Winter College on Technology of Lasers



Winter college on Atomic and Molecular Physics



Buah-Bassuah lecturing one Winter College on Semiconductor lasers and detectors at ICTP. 1988



Head of Office of External Activities and effective role in Africa- Prof. Gallieno Denardo of blessed Memory with SPIE Honour. Worked closely with Prof Allotey to see the needs of some continents.

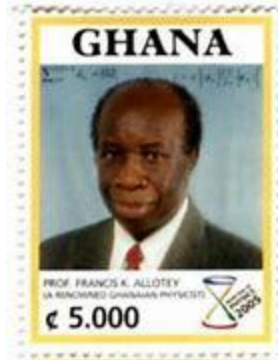
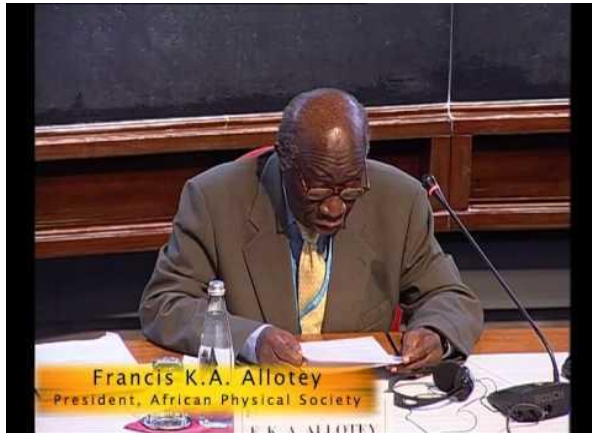


Off shoot of ICTP and Optical Societies Activities and workshops in Africa on Technologies of Lasers



Initiative of Prof. Ahmadou Wague in Senegal. Supported by Prof. Buah-Bassuah of Ghana

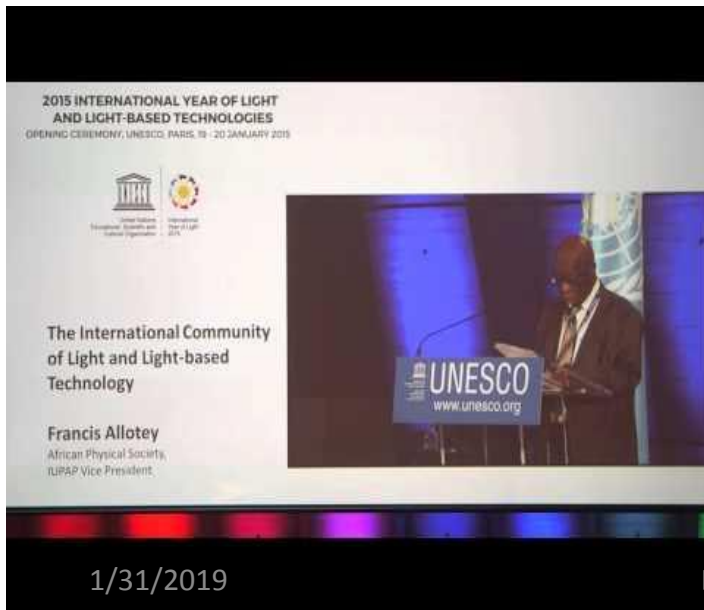
Major Contributions of Prof Allotey



Ghana honours Allotey



AIMS launches academic operations in Ghana



Opening of LAFOC at Cape Coast, Ghana in 1993. Establishment Laser Centre in Ghana through Office of External Activities of ICTP.



Organised several Workshops including Regional Workshop on Optofluidics and Optical Manipulation, Cape Coast, 2011 . Initiative of Joe Niemela.



Prof. Allotey's Dream fulfilled with the Architects(Prof. Dudley and Niemela).

Who is Prof. F.K.A. Allotey

Francis Kofi Ampenyin Allotey, Ghanaian physicist. Achievements include first to electron-hole scattering resonances effect in soft X-Ray spectroscopy.

Visiting ICTP since 1967

—

Honorary fellowship, Institute of Physics (IOP), 2012

—

President of the Ghana Academy of Arts and Sciences, 2011

—

Ghana's Millennium Excellence Award (MEA), 2005

He is a man of many branches and distinguished personality.

Married from Barbados and later from Ghana after her wife demise. Had 2 children Francis and Joseph. A Catholic

Founder and First Director of KNUST Computer Centre in 1975.

Dean, Faculty of Science and Pro. Vice –Chancellor in 1978.

Founder of AIMS in South Africa, Senegal, Ghana, Cameroun, Tanzania and Rwanda.

Promotion of Mathematical Sciences in Africa

Quote of Prof. Allotey: ‘ Without Mathematical training Africa would be unable to access the full power of technologies to solve their countries numerous problems. It is time we consistently urged our African youth to learn to contribute significantly by researching into extension of Knowledge in Mathematical Sciences.

Disseminated Intravascular Coagulation in Mathematics, University London, 1960. Doctor of Philosophy in Mathematics Physics, Princeton University, 1966. Doctor of Science Honoris Causa (honorary), University Cape Coast, Ghana, 1998.

Doctor of Science Honoris Causa (honorary), Kwame Nkrumah University of Science and Technology, Ghana, 2003. Doctor of Science Honoris Causa (honorary), Karlstad University, Sweden, 2006. Doctor of Science Honoris Causa (honorary), University Education, Ghana, 2007.

Doctor of Science Honoris Causa (honorary), Walter Sisulu, South Africa, 2010. Doctor of Science Honoris Causa (honorary), University Maryland, 2010.

Academy of Sciences for Developing World, Africa Academy of Sciences (founder & vice president), Ghana Institute Physics (founder), British Computer Society (chartered), Institute of Physics, Ghana Institution Engineers (honorary).

the leadership and achievements of Prof. Francis Allotey as President of the Ghana Academy from 2011 to 2014.



Prof. Allotey and his Hon. Secretary Prof. Mills Tettey of GAAS able to convince Government to get offices and conference Hall for the Academy. Waiting to be inaugurated

What the people say about Prof. Allotey

- so many people say that Prof. was a mentor to them that is a wise and trusted counselor or teacher.
- They include: former Minister of MEST, the then Sector Minister of GAEC, former VC of KNUST, and the current President of this great Academy and many others.
- As Chairman of GAEC , he lobbied at IAEA for the establishment of the two National Centres for Radiotherapy and Nuclear Medicine (NCRNM) at Korle Bu Teaching Hospital (KBTH) and Komfo Anokye Teaching Hospital (KATH) in 1998 and 2003 respectively in addition to training of radiation oncologists.

Family:

1. Family Unifier, kind, generous to everyone he met.
2. Had passion for helping students to succeed in their studies and master their talents.
3. Helped in Rural Development in his hometown with schools and library.
4. Caring, understanding, loving, God Fearing.
5. Sacrificing his time and energy for others was pure, he never tried to gain anything for himself.
6. Epitome of humility.

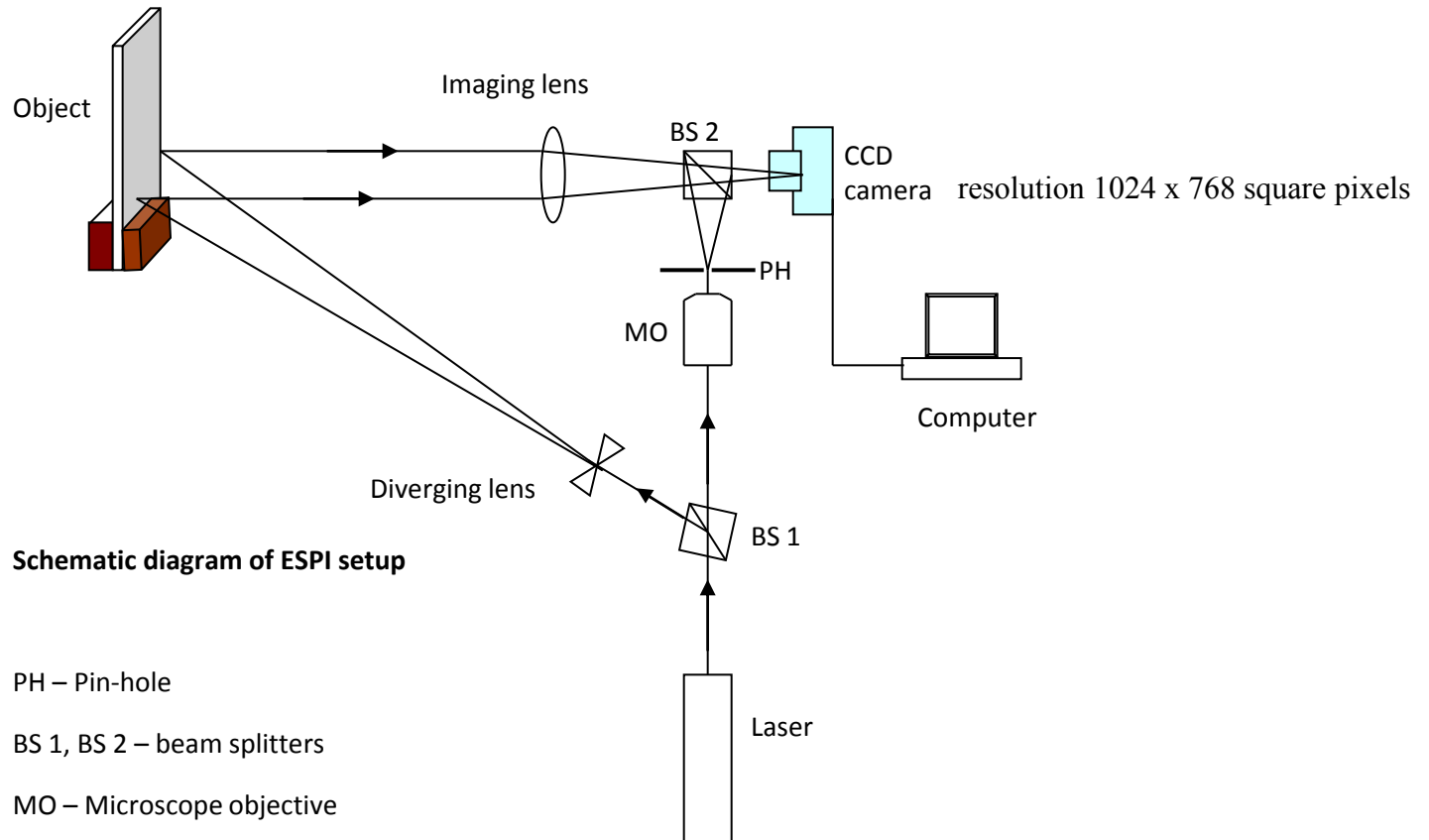
Where he worked:

1. At AIMS Ghana, Graduated, 201 students from 23 African countries, 68 are females.
2. Upgraded AIMS Ghana before his death as UNESCO Centre of Excellence.
3. In UG served as trail blazer for Mathematicians in Ghana.
4. Secured funding for Department from ICTP for Graduate Programmes.
5. In KNUST exhibited clear genius in his formalism.
6. At CSIR, chairman of Council (1981 -1997) promoted new Council and promoted capacity building.

What are some of experimental and theoretical legacies.

**Series of experiments in
Agriculture, Industry and
education**

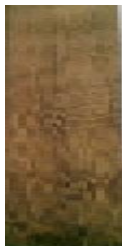
Experimental Set Up



SAMPLES



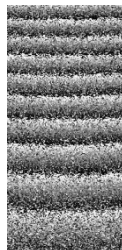
Steel



Odum

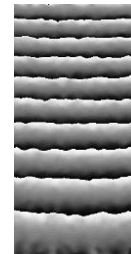


Kussia



Unfiltered Phase difference distribution mod. 2π

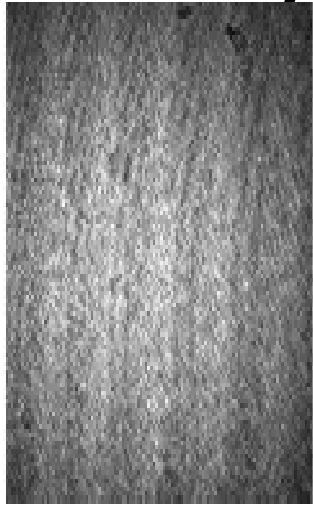
: Two phase distributions, unfiltered and filtered of steel. Force applied was 0.10 N. That of wood samples were similar.



Filtered phase difference distribution mod. 2π

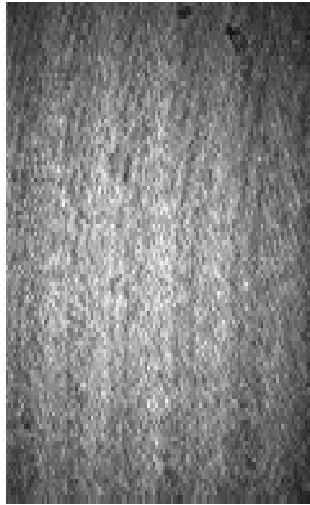
Steel (200mm x 20 mm x 5mm) and two wood samples, Odum and Kussia (300mm x 40 mm x 6 mm).

Analysis of Recording



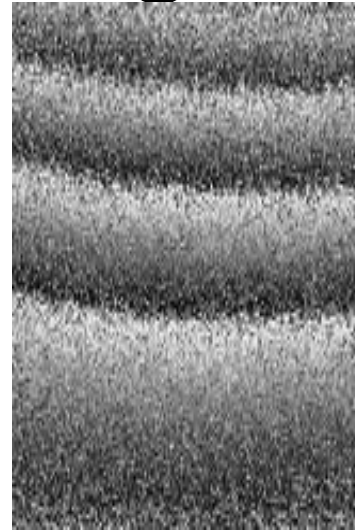
**After
Deformation**

—

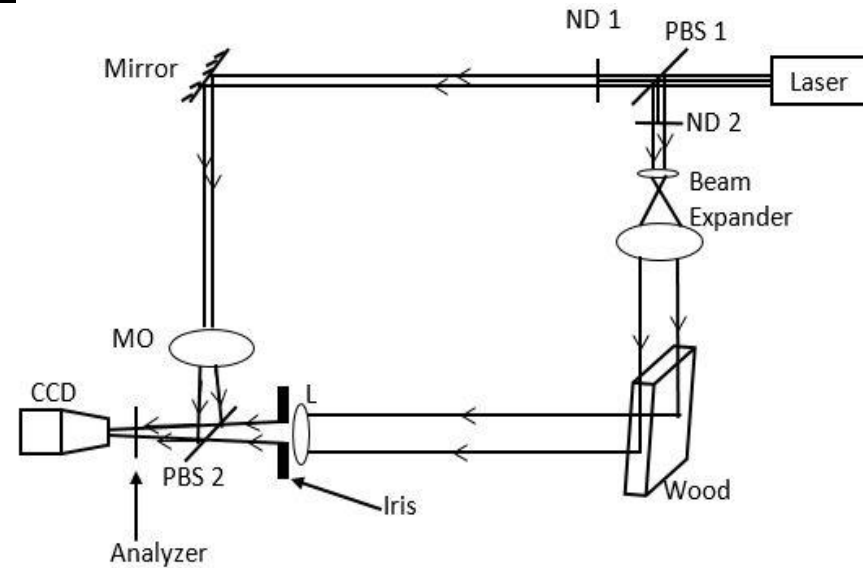
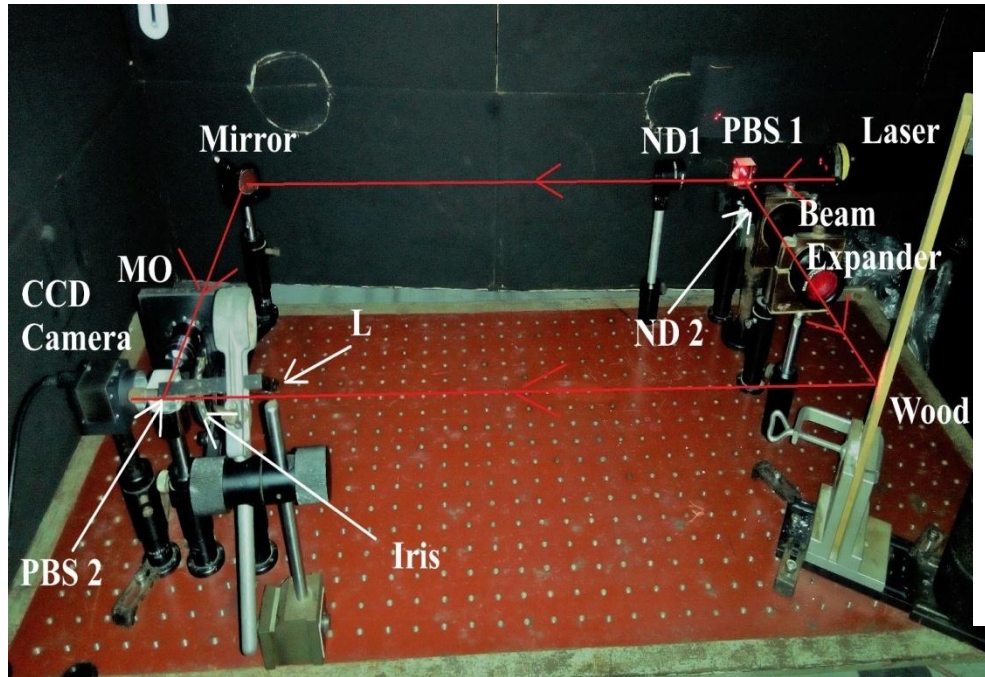


Before Deformation

=

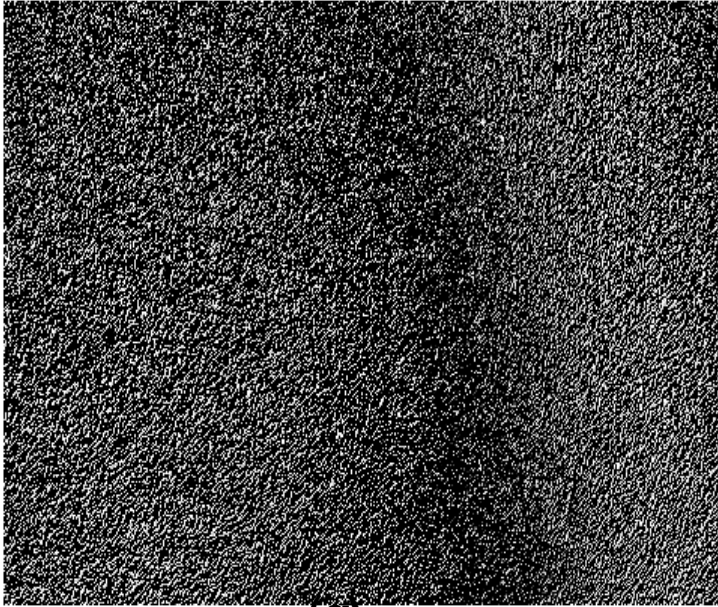


**Phase
difference**



INVESTIGATION OF THE SURFACE DYNAMICS OF DRIED AND WET WOOD WITH TEMPERATURE RISE USING ELECTRONIC SPECKLE PATTERN INTERFEROMETRY

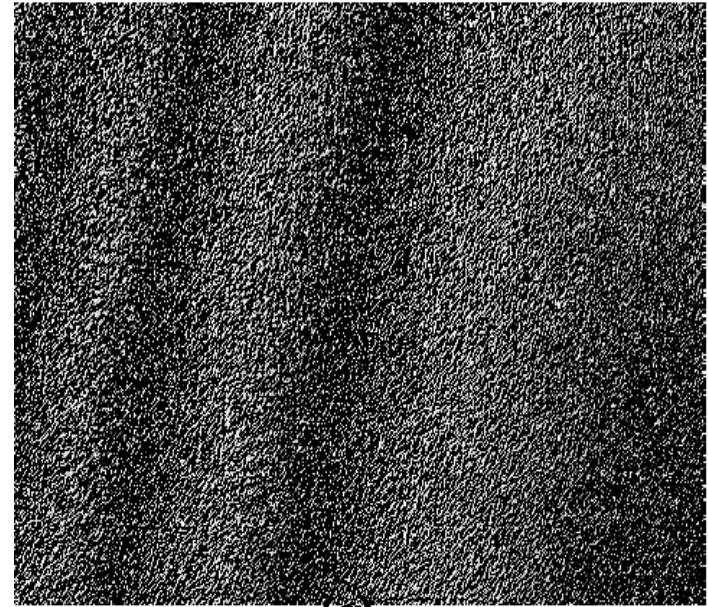
Phase Difference Of Dried Wood



(g)

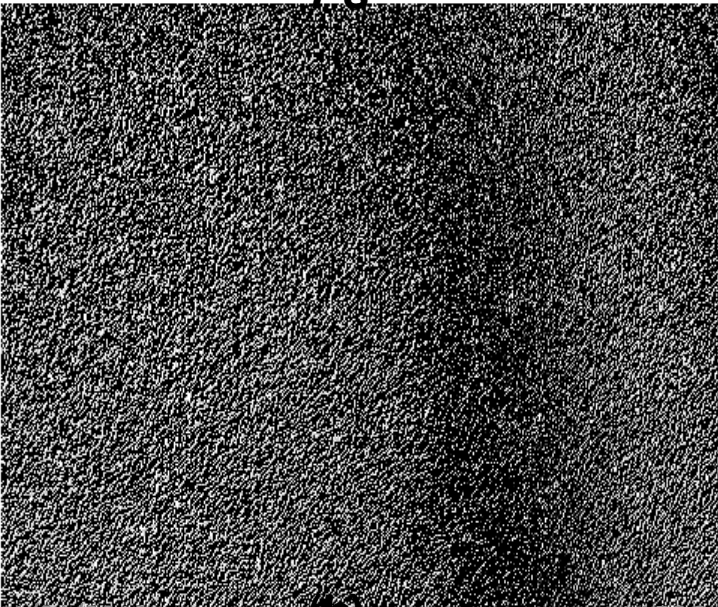
7 s

Phase Difference Of Wet Wood



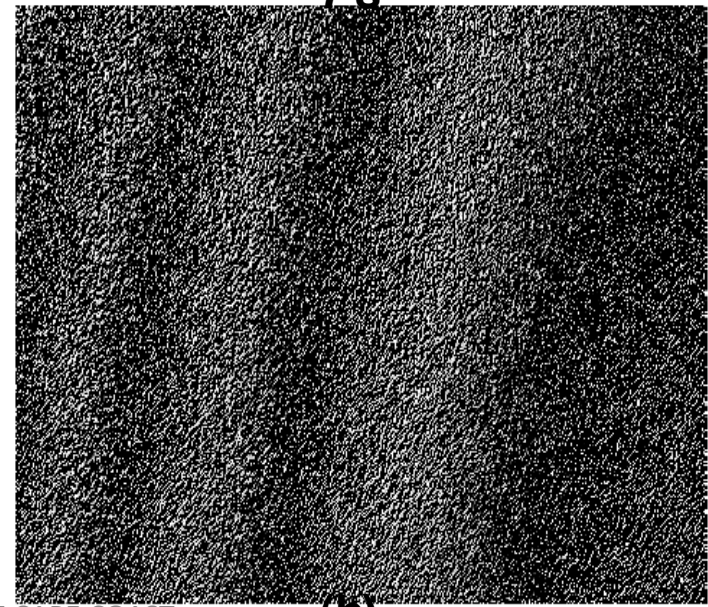
(g)

7 s



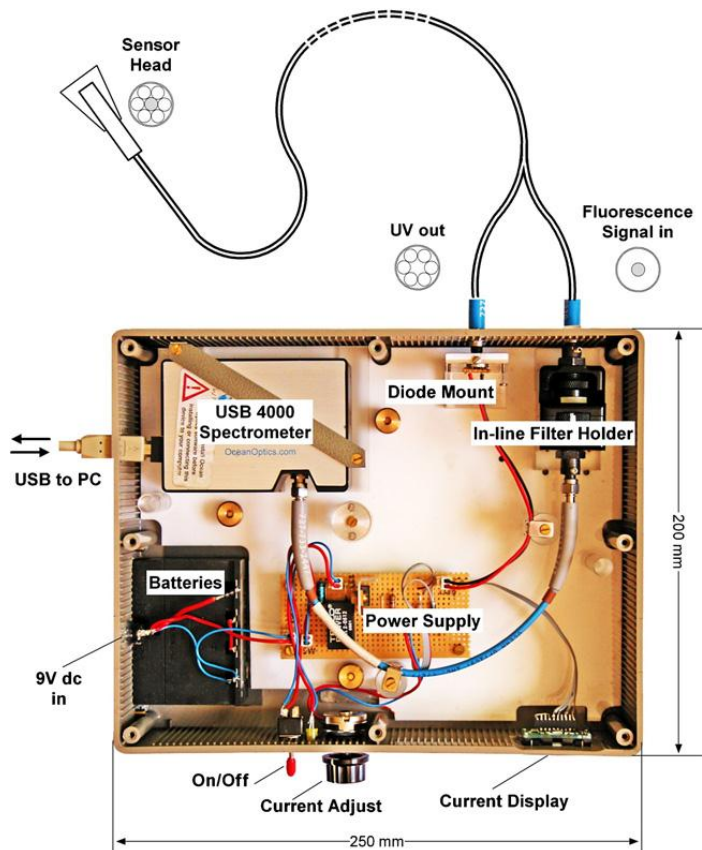
(h)

8 s

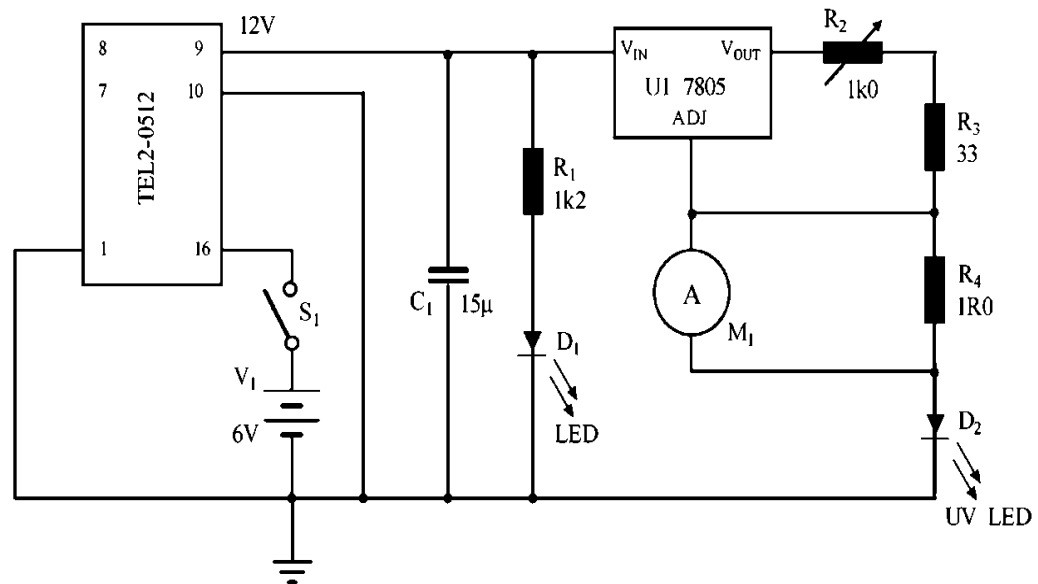


(h)

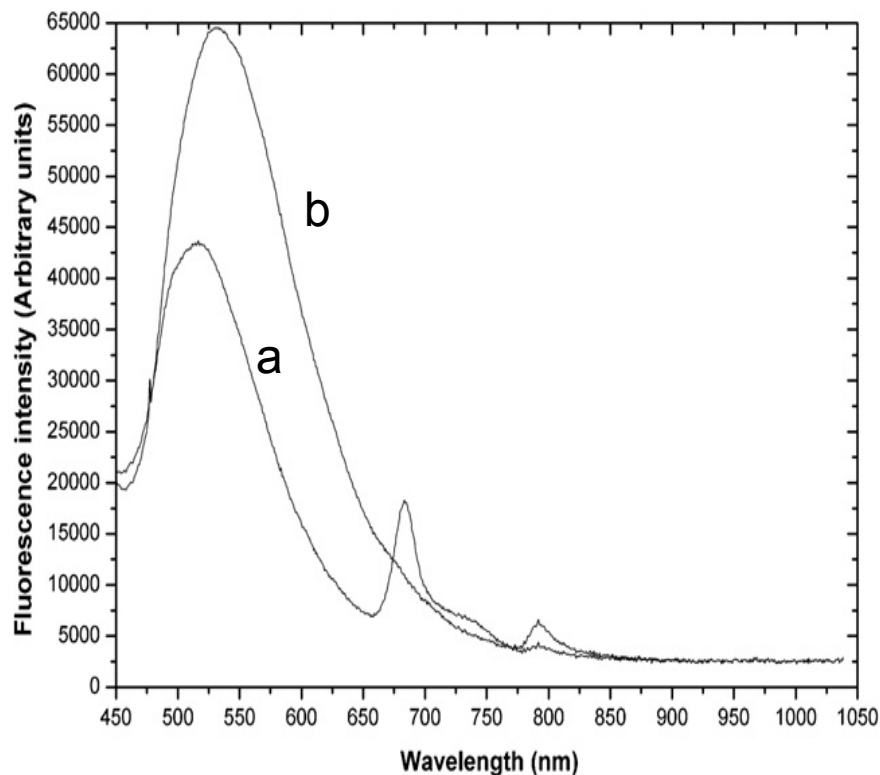
8 s



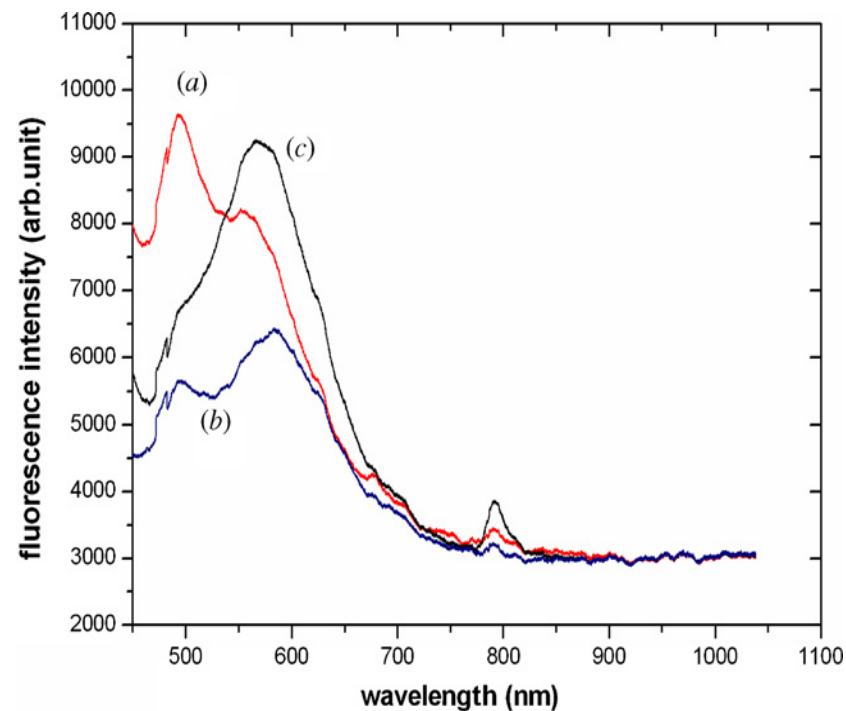
Layout of the UV LED fibre-probe fluorometer showing a photograph of the assembly of the device with the fibre probe



Circuit diagram for the UV LED driver.

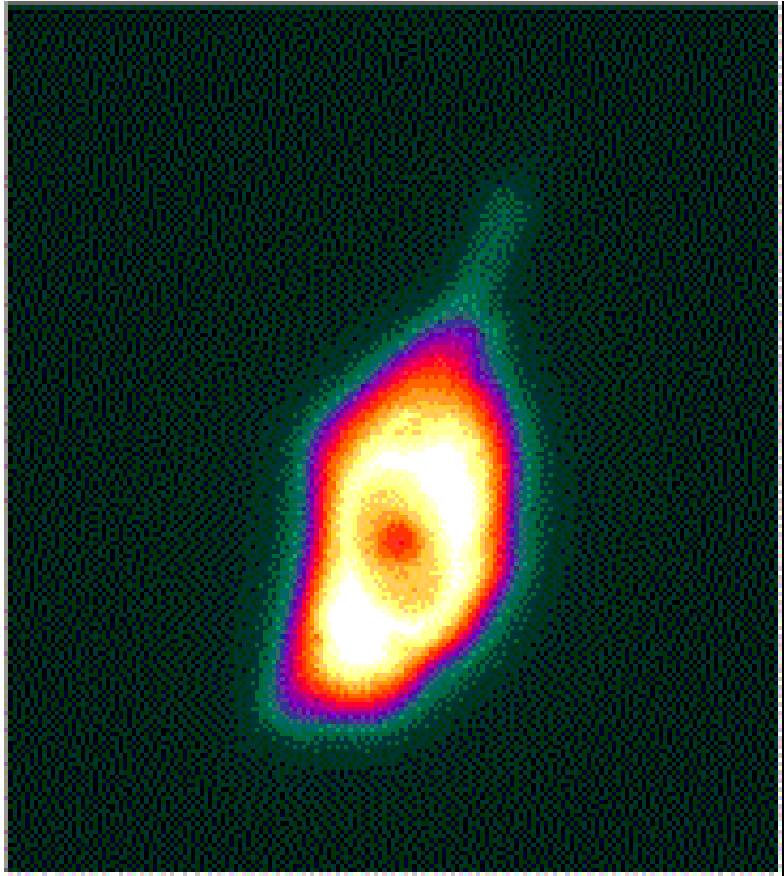


Fluorescence spectra of lemon skin showing
 (a) greenish-yellow skin lemon and
 (b) yellow skin lemon.



Fluorescence spectra of mandarin skin showing (a) greenish-orange,
 (b) yellowish-orange and
 (c) orange skin mandarin.

Imaging chlorophyll fluorescence of a leaf with different filters



ACKNOWLEDGEMENTS

1. Staff of ICTP for their prompt Action
2. Dr. Akin-Ojo and his team at University of Rwanda
3. All those who thought of this meeting.

THANK YOU ALL