

# DEFENCE RESEARCH & DEVELOPMENT ORGANISATION (DRDO) GOVT. OF INDIA - MINISTRY OF DEFENCE

# **DEFENCE ELECTRONICS APPLICATIONS LABORATORY**

Raipur Road, Dehradun – 248001

Phone: 0135-2787256, Fax: 0135-2787256

Dated: 26th May, 2017

# CERTIFICATE

This is to certify that Mr. Deepak Kumar, a student of Master of Technology (Microwave Electronics) from Department of Electronic Science, University of Delhi South Campus (UDSC) under class Roll No. 3663 for the session 2015-2017, has completed the Dissertation entitled "Design of 100 Watt Ku-band Power Amplifier" as an M. Tech. trainee at Defence Electronics Applications Laboratory (DEAL), DRDO, Dehradun, during the period 28th Dec 2016 to 26<sup>th</sup> May 2017. The Dissertation work has been completed under the supervision of Sh. Rajendra Singh, Scientist-'F'.

He has done an excellent job and was sincere during his training. He was always enthusiastic to learn, implement and solving problem at hand.

Ashok Kumar, Sc-G

**Group Director** 

Millimeter Wave Systems Gp.

DEAL, DRDO

भारत सरकार अंतरिक्ष विभाग अंतरिक्ष उपयोग केन्द्र आंबावाडी विस्तार डाक घर.

अहमदाबाद-380 015. (भारत) इरमाष : +91-79-26913050, 26913060

www.sac.isro.gov.in/www.sac.gov.in



Government of India Department of Space

SPACE APPLICATIONS CENTRE

Ambawadi Vistar P.O.

Ahmedabad - 380 015. (INDIA) Telephone: +91-79-26913050, 26913060

website: www.sac.isro.gov.in/www.sac.gov.in

May 25, 2017

#### CERTIFICATE OF PRACTICAL TRAINING

Name of the student

: SAGAR SINGHAL

Name of the institution:

UNIVERSITY OF DELHI, SOUTH CAMPUS

**NEW DELHI** 

Period of training

: 02/01/2017 to 25/05/2017

Name of the division

where training was taken: MSAD/ASG

#### **DETAILS OF TRAINING**

"DESIGN AND DEVELOPMENT OF X BAND DUAL POLARIZED WIDEBAND MULTILAYER APERTURE COUPLED MICROSTRIP PATCH ARRAY ANTENNA"

#### PROFICIENCY SHOWN BY THE CANDIDATE

:

Attendance

REGULAR

Conduct

**VERY GOOD** 

Practical ability

He has good proficiency in HFSS. He is sincere and

hardworking.

HEAD, HRDD

भारत सरकार अंतरिक्ष विभाग अंतरिक्ष उपयोग केन्द आंबावाडी विस्तार डाक घर. अहमदाबाद-380 015. (भारत)

दूरभाष: +91-79-26913050, 26913060 वेचसाईट : www.sac.isro.gov.in/www.sac.gov.in



Government of India Department of Space SPACE APPLICATIONS CENTRE

Ambawadi Vistar P.O.

Ahmedabad - 380 015. (INDIA) Telephone: +91-79-26913050, 26913060

website: www.sac.isro.gov.in/www.sac.gov.in

May 25, 2017

# **CERTIFICATE OF PRACTICAL TRAINING**

Name of the student JATIN SINGH GAUTAM

Name of the institution : UNIVERSITY OF DELHI, SOUTH CAMPUS

Period of training 04/01/2017 to 25/05/2017

Name of the division

where training was taken: LMDD/MEG/ESSA

## **DETAILS OF TRAINING**

"DESIGN AND CHARACTERIZATION OF LEAKY SURFACE ACOUSTIC WAVE(SAW) RESONATOR"

# PROFICIENCY SHOWN BY THE CANDIDATE

Attendance : REGULAR

Conduct **VERY GOOD** 

Practical ability He has good proficiency in Matlab. He is sincere

and hardworking.

HEAD, HRDD

# DEPARTMENT OF ELECTRONIC SCIENCE

University of Delhi South Campus

Benito Juarez road, New Delhi 110021, India



# **CERTIFICATE**

This is to certify that Ms. Akanksha Varun, M. Tech.IV Semester student of Department of Electronics Science, University of Delhi South Campus has successfully completed his project work entitled "Design Ku-band Power Amplifier MMIC" for the partial fulfillment of his Master's degree (M. Tech) in Microwave Electronics from the Department of Electronic Science, University of Delhi South Campus, New Delhi at Solid State Physics Laboratory (SSPL), Delhi from 26<sup>th</sup>December 2016 to 26<sup>th</sup> May 2017.

Assistant Prof.P.K. Rao

(Internal Project Guide)

Dept. of Electronic Science

UDSC, New Delhi

Mr. Amit Birwal

(Project Coordinator)

Dept. of Electronic Science

UDSC, New Delhi

Prof. Avinashi Kapoor 1-6-17

Head of Department

Dept. of Electronic Science

UDSC, New Delhi



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#### **DEFENCE ELECTRONICS APPLICATIONS LABORATORY**

Raipur Road, Dehradun – 248001

Phone: 0135-2787256, Fax: 0135-2787256

Dated: 26th May, 2017

#### **CERTIFICATE**

This is to certify that Mr. Dharmendra Kumar, a student of Master of Technology (Microwave Electronics) from Department of Electronic Science, University of Delhi South Campus (UDSC) under class Roll No. 3664 for the session 2015-2017, has completed the Dissertation entitled "Ku-band Low Noise Amplifier Design" as an M. Tech. trainee at Defence Electronics Applications Laboratory (DEAL), DRDO, Dehradun, during the period 28<sup>th</sup> Dec 2016 to 26<sup>th</sup> May 2017. The Dissertation work has been completed under the supervision of Sh. Rajendra Singh, Scientist-'F'.

He has done an excellent job and was sincere during his training. He was always enthusiastic to learn, implement and solving problem at hand.

Ashok Kumar, Sc-G

**Group Director** 

Millimeter Wave Systems Gp.

DEAL, DRDO



सी.एस.आई.आर राष्ट्रीय भौतिक प्रयोगशाला CSIR-NATIONAL PHYSICAL LABORATORY (वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद) (Council of scientific & Industrial Research) डॉ. के.एस.कृष्णन मार्ग, नई दिल्ली 110012,(भारत) Dr.K.s. Krishnan Marg, New Delhi-110012, (INDIA)



# **CERTIFICATE**

It is certified that the project report entitled "DESIGN AND CHARACTERIZATION OF SUPERCONDUCTING PATCH ANTENNA" is submitted by Subhash Chandra Chaudhary for the partial fulfillments of the requirement of degree "Master of Technology in Microwave Electronics Engineering "is bonafide dissertation work carried out under the supervision of undersigned scientist in Time and Frequency and Electrical and Electronics and Metrology Division at CSIR-National Physical Laboratory New Delhi from 26<sup>th</sup> December 2016 to 26<sup>th</sup> May 2017.

This is original project carried out at NPL New Delhi and to the best of our knowledge this work has not been submitted anywhere else for any other Degree or Diploma. We wish his good luck for all his future enduovers.

MATIONAL PHYSICAL I ABORATORY

(HRD GROUP)
Endorsement No. 3106-A | Malk

Ms. Sandhya Malikar Patel

Sationesterhalsguide) thoratory

Dr. K. Scientist

Time and frequency and electrical and Electronic metrology division

जार प्राप्त पन्न / Dr. R. R. PANT मुख्य वैज्ञानिक एव प्रमुख एव आर.डी. पुष Chief-Scientist & Head, HRD Group मी एम आई आर-चार्ट्य मीतिक प्रयोगमाना CSIR - National Physical Laboratory के के एस. कुम्म मार्ग, नई दिस्सी-12

# BHARAT ELECTRONICS

A GOVT. OF INDIA (MINISTRY OF DEFENCE) ENTERPRISE BHARAT NAGAR P.O. GHAZIABAD-201010. (U.P.)

HUMAN RESOURCE DEVELOPMENT DEPARTMENT

# TRAINING CERTIFICATE

This is to certify that Mr. / Ms. ANIL KUMAD	(UPT/1330/GAD/20/7)
Pursuing MITECH from DELHI UNIVERSITY COUTH CAMPUS	SUTH CAMPUS
has undergone unpaid practical training during the period from 4   01   2017 to 26   05   17	F1/20/82 02 F102

The project undertaken by him/her was 600 WATT TRASMITTER FOR TRANSSOUDER IFF.

EXCELLENT His /her performance during the training was\_ FOR BHARAT ELECTRONICS LTD.

MANA GEREGI (ATRICE) / गा.बाद) Manager (HRD/GAD)



भारत सरकार - रक्षा मंत्रालय Govt of India - Ministry of Defence रक्षा इलैक्ट्रॉनिकी प्रयोज्यता प्रयोगाशाला Defence Electronics Applications Laboratory पोस्ट बॉक्स सं0 6, रायपुर रोड PO Box No. 6, Raipur Road देहरादून - 248001 Dehradun – 248001

Dated: 29th May 2017

#### CERTIFICATE

Certified that the report titled "DESIGN OF X- BAND LOW NOISE AMPLIFIER" is a bonafide record of the training work carried out by Mr. Chitransh Srivastava towards partial fulfilment of the requirements for his Master's Degree (M. Tech.) in Microwave Electronics from the department of Electronics Science University of Delhi South Campus, New Delhi.

The work was carried out from 28<sup>th</sup> December 2016 to 28<sup>th</sup> MAY 2017 at Defence Electronics Applications Laboratory (DEAL) and was successfully completed under the guidance of **Shri Dinesh Dwivedi**, **Scientist-D**.

(Dinesh Dwivedi)
Scientist-D

(Umesh Bahuguna) Scientist-F Microwave Systems Group

दूरभाष Tel : 0135-2787083, 84, 256 फैक्स Fax : 0135-2787265, 2787290 ई मेल E-Mail : dealdrdo@del2.vsnl.net.in

# इलेक्ट्रानिक्स तथा रेडार विकास स्थापना

भारत सरकार, रक्षा मंत्रालय रक्षा अनुसंधान तथा विकास संगठन डी आर डी ओ काम्प्लेक्स, सी वी रामन नगर बेंगलूर - 560 093, भारत



ISO 9001:2008 Establishment

#### Electronics & Radar Development Establishment

Govt. of India, Ministry of Defence Defence Research and Development Organisation DRDO Complex, C V Raman Nagar Bangalore – 560 093, India

# <u>CERTIFICATE</u>

This is to certify that the project work entitled

# "DESIGN AND DEVELOPMENT

OF

# WAVEGUIDE ORTHO-MODE TRANSDUCER (OMT) IN KU-BAND FOR SPACE APPLICATION "

is a bonafide work successfully completed by

# AMLESH KUMAR SINGH

Student of M. TECH. (Microwave Electronics), DEPARTMENT OF ELECTRONIC SCIENCE, UNIVERSITY OF DELHI SOUTH CAMPUS under my supervision and guidance at 'RAMD' division of ELECTRONICS AND RADAR DEVELOPMENT ESTABLISHMENT (LRDE), Bangalore, during the period 6th Jan 2017 to 26th may 2017, as a part of the award of Master degree in Microwave Electronics from UNIVERSITY OF DELHI SOUTH CAMPUS, NEW DELHI-110021 during the academic year 2016-2017.

RAVI KUMAR SAMMINGA

Scientist 'E'

RAMD, LRDE







# Your Source for R/F And Microwave Components

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Email: <u>sales@mesamicrowave.com</u>
Web: <u>www.mesamicrowave.com</u>

# Certificate of Training

Presented to

Mr. Chandresh Pandey

For

Completion of development project "Waveguide Bandpass filter using iris inductive window coupled structure"

Date: 29th May, 2017

We hereby certify that **Mr. Chandresh Pandey**, M. Tech. IV Semester student of Department of Electronics Science, University of Delhi South Campus has successfully completed his project work entitled "Waveguide Bandpass filter using iris inductive window coupled structure" for the partial fulfillment of his Master's degree (M. Tech) in Microwave Electronics from the Department of Electronic Science, University of Delhi South Campus, New Delhi at Mesa Microwave Corporation for environmental monitoring and remote control, Dehradunfrom31<sup>st</sup> December 2016 to 26<sup>th</sup> May 2017.

This is to certify that the referenced above Waveguide Bandpass filter is manufactured tested and or inspected in accordance with the requirement of the applicable specifications. Documentary Evidence in the form of test and/or inspection reports is available upon request.

LORI COFEE

(Authorized Signatory)

Lori Coffee

Approved by: M.R.

Rev. Cage Code: 6LBG8



# अन्तर-विश्वविद्यालय त्वरक केन्द्र INTER-UNIVERSITY ACCELERATOR CENTRE

(Formerly Nuclear Science Centre)

(विश्वविद्यालय अनुदान आयोग का स्वायल केन्द्र) (An Autonomous Centre of UGC)

Dated: 31/07/2017

# Summer Training Certificate

This is to certify that, Mr. Lokesh Joshi, student of M.Sc. (Electronics), University of Delhi has successfully completed his 2 months (from May 22, 2017 to July 22, 2017) summer internship

The project was undertaken by him in BTS Lab, IUAC where he worked on "Development and testing of Web based Data Logger for MHB control electronics" as an application of IoT for Accelerators.

His conduct during the training period was good. We wish him success in future.

Ashish Sharma Mr. Ashish Sharma

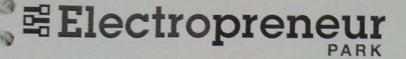
Engineer

Dr. P. Sugathan

Programme Coordinator

Inter-Univ Inter-University Accelerator Centre Aruna Asaf Ali Marg, New Delhi-110 067

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Funded and Supported by MeitY, Government of India

University of Delhi, South Campus III Floor, Library Building, Benito Juarez Road New Delhi - 110 021 Tel.: +91 11 65164488

www.electropreneurpark.com

25th July, 2017

## TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.Rahul Soni, a student of Department of Electronic Science, University of Delhi, South Campus has successfully completed 2 (two) months training at EVI Technologies Private Limited a company incubated at Electropreneur Park.

The period for his training as per our records was from May 22, 2017 to July 20, 2017.

During the period of his training programme with us he was found punctual, hard-working and inquisitive.

He assisted the technical team of EVI Technologies Private Limited in their project VCube EV charger system designed with major contribution under power sensing and feedback circuitry. Further, he developed a standalone android application for VCube operation which was successfully tested.

During his training he was not paid any stipend nor any stipend is due to be paid to him by Electropreneur Park.

We wish him all the success in his future pursuits.

For Electropreneur Park

**Authorized Signatory** 

An STPI Project

Academic Partner



Implementation Partner





# Defence Institute of Physiology and Allied Sciences মধ্যা খামীমক্রিয়া তুর্তা মাজক বিজ্ঞাল মাম্যাল

(An ISO 9001: 2000 Certified Institute)

Govt. of India, Ministry of Defence, Defence Research & Development Organization भावत व्यवकाव वक्षा मंत्रालय वक्षा अनुभंधान एवं विकास संगठन Lucknow Road, Timarpur, Delhi – 110 054 लखनक बोड, तिमावपुद दिल्ली - 110 054

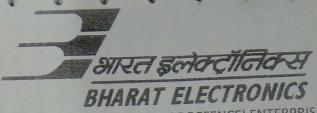
# Certificate

This is to certify that Mr. PRABHAT PRAJAPATI student of M.Sc. ELECTRONICS, UNIVERSITY OF DELHI, SOUTH CAMPUS, DELHI-110021 have undergone summer training from 22<sup>th</sup> May 2017 to 20<sup>th</sup> July 2017 in Biomedical Instrumentation Division on "SIMULATION AND PCB IMPLEMENTATION OF LOW LEVEL LIGHT THERAPY DEVICES".

(Dr. Shweta Rawat ) Sc 'D'

HRD Coordinator

Shrela.



A GOVT. OF INDIA (MINISTRY OF DEFENCE) ENTERPRISE BHARAT NAGAR P.O. GHAZIABAD-201010. (U.P.)

HUMAN RESOURCE DEVELOPMENT DEPARTMENT

# TRAINING CERTIFICATE

This is to certify that Mr. / Ms. Km. AKSHA	(HRD/ VPT/374/NSC )
Pursuing MSC C Electronic From University of Delhi Sout	th campus (UDSC)
has undergone unpaid practical training during the period from 22 <sup>nd</sup> -May-20 in our organization.	17 to 20th July - 2017
The project undertaken by him/her was "Rohini Raday"	
His /her performance during the training was <u>Excellent</u>	
	For BHARAT ELECTRONICS LTD.
Date: 20th July - 2017	MANAGER (HRD) प्रमात व्यास Prabhat Vyas प्रबन्धक (मा.स.वि./ गा.बाद)
	Manager (HRD/GAD)

# ADA

# AERONAUTICAL DEVELOPMENT AGENCY

Campus II Technology Directorate of Avionics & Weapon Systems (Ministry of Defence, Govt. of India) Suranjandas Road, New Thippasandra Post, Bangalore - 75, India

Date: 20/07/2017

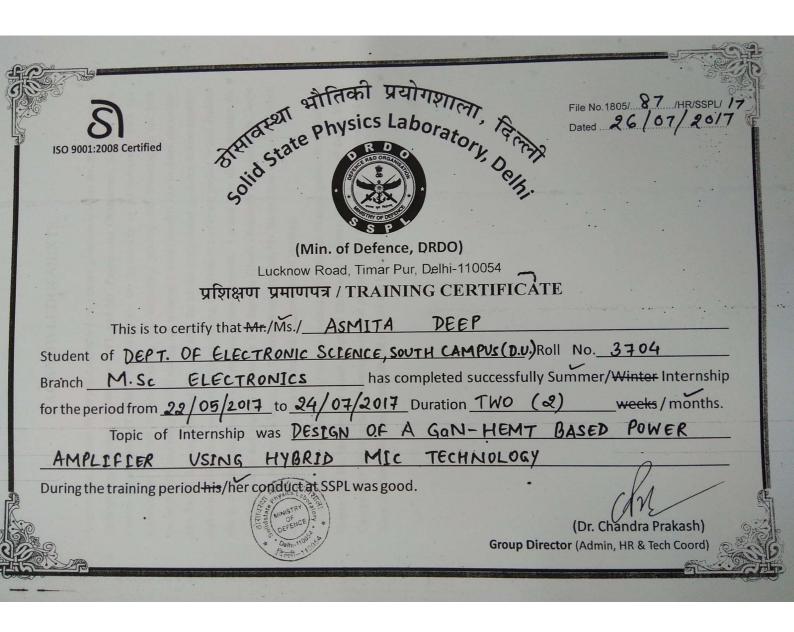
To, Whomsoever concerned

I hereby certify that Pallavi T. has completed her summer training at our organization Aeronautical Development Agency (ADA) for a period of 2 months from 24-05-2017 to 20-07-2017. During this period, she has completed a project titled 'Analysis of LCA Flight Data using MATLAB' under my guidance.

Nirmala Satishkumar

Sc/Engr 'F'

Aeronautical Development Agency (ADA)





# Certificate of Training

This is to certify that Mr. / No of DOES SOUTH CAM	-13.	IISHANG JAGOI IIVERSITY OF DELHI
has undergone Summ		ining Program'17
from 22/05/2017	to _	20/07/2017
Ar.Vishal Singh Aning Coordinator		For UPSETS TELEMENTALS.  Er. U. S. Yadav  Director

UVSofts Technologies Pvt. Ltd.



ISO-9001-2008 ISO-14001-2004 Certified

# सेन्ट्रल इलेक्ट्रॉनिक्स लिमिटेड Central Electronics Limited

भारत सरकार का उद्यम (A GOVERNMENT OF INDIA ENTERPRISE)

4, औद्योगिक क्षेत्र, साहिबाबाद - 201010 (यू०पी०) 4, Industrial Area, Sahibabad - 201010 (U.P.) Web Site: www.celindia.co.in E-mail: cel@celsolar.com Fax: 0120-2895148

Phone Nos.

0120-2895143

No.C-5 (b)/II-76/18

Dated: 20/07/2017

# To Whomsoever It May Concern

This is to certify that Ms. Sandhya D/o Shri Padam Singh a student of M.Sc. (Electronics Science), Department of Electronics Science, UDSC, New Delhi, Roll/Enrl. No. KC-1127/2013 has undergone summer/ industrial training (unpaid) from (22/05/2017) to (20/07/2017) in the Company, as per this office letter of even no. dated 22/05/2017.

Asstt. General Manager (HRD)

पंजीकृत कार्यालय : 781, देशबन्धू गुप्ता रोड, नई दिल्ली-110005 दूरभाष: 011-23526836,23549336 Regd. Office : 781, Desh Bandhu Gupta Road, Karol Bagh, New Delhi - 110 005 Ph.: 011-23526836, 23549336 श्रेतीय कार्यालय : 51. सी एम एच रोड, पहली मंजिल, इंदिरा नगर, बेंगलुरू-560038 दूरभाष: 080-252 51740



# अन्तर-विश्वविद्यालय त्वरक केन्द्र INTER-UNIVERSITY ACCELERATOR CENTRE

(Formerly Nuclear Science Centre)

(विश्वविद्यालय अनुदान आयोग का स्वायत्त केन्द्र) (An Autonomous Centre of UGC)

Dated: 31/07/2017

# **Summer Training Certificate**

This is to certify that, Mr. Enokh Wajri, student of M.Sc. (Electronics), University of Delhi has successfully completed his 2 months (from May 22, 2017 to July 22, 2017) summer internship.

The project was undertaken by him in BTS Lab, IUAC where he worked on "Development of interfacing board for Web based Data Logger for MHB control electronics" as an application of IoT for Accelerators.

His conduct during the training period was good. We wish him success in future.

Ashish shoeme. Mr. Ashish Sharma

Engineer

Dr. P. Sugathan **Programme Coordinator** 

डा. पि. सुगतन / Dr. P. Sugathan

Scientist 'H'
Research Coordinator
अन्तर-विश्वविद्यासय स्वरक केंद्र
Inter-University Accelerator Centre
Aruna Asaf Ali Marg, New Delhi-110 067 email: sugathan@iuac.res.in