KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE UNIVERSITY)
Under sec. 3 of UGC Act 1956. Accredited by NAAC with "A" Grade

Anand Nagar, Krishnankoil - 626126, Srivilliputtur (via), Virudhunagar District, Tamilnadu.

APPLICATION FOR ADMISSION TO Ph.D. PROGRAMMES

Date of Application:09-12-2020

Department	MECHANICAL ENGINEERING	Application No.	202020081
Area of Research	MANUFACTURING	Research Mode	PART TIME

Name :A.BALASUADHAKAR

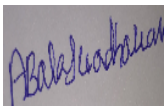
Date of Birth / Age :09-03-1979 / 41 Years

Gender :MALE

Category :BC

e-Mail ID :balasudhakar24@gmail.com

Mobile :9677263956



Father's/Husband's Name	T.ARUMUGAM	**Father's/Husband's Occupation**	EXPIRED
Family Income	500000	**Residental Type**	URBAN
Birth Place	DINDIGUL	**Mother Tongue**	TAMIL
Religion	HINDU	**Martial Status**	MARRIED
Aadhaar No.	587515428866	**PAN No.**	ALAPB4399L
Physically Challenged	NO	**Type of Disability**	-

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DINDIGUL
DINDIGUL DISTRICT
TAMIL NADU
INDIA
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Permenant Address:
5/1161
VILLAVAN COLONY, NANDAVANA PATTY
DINDIGUL
DINDIGUL DISTRICT
TAMIL NADU
INDIA
Pin-624001

Qualification

Degree	Discipline	College/university	Year Passed	AVG/CGPA	Class	Mode
M.E	CAD/CAM	ANNA UNIVERSITY/RVS COLLEGE OF ENGINEERING AND TECHNOLOGY	2004	68	FIRST	REGULAR
B.E	MECHANICAL ENGINEERING	MADRAS UNIVERSITY/ANNAI TERASA ENGINEERING COLLEGE	2002	64	FIRST	REGULAR

Experience

Organization	Designation	Experience From	Experience TO	Work Nature
DIRE DAWA UNIVERSITY,ETHIOPIA	LECTURER	2012-10-15	2020-12-09	TEACHING
ERITREA INSTITUTE OF TECHNOLOGY,ERITREA	LECTURER	2011-03-18	2012-07-06	TEACHING
OXFORD ENGINEERING COLLEGE,INDIA	ASSISTAN PROFESSOR	2010-02-01	2011-02-28	TEACHING

SAMS COLLLEGE OF ENGINEERING AND TECHNOLOGY	ASSISTANT PROFESSOR	2006-02-15	2010-01-29	TEACHING

Payment Details				
Transaction ID	Reference	Date of transaction	Amount	Status
202020081_201209124300	VSBI9541841225	09-12-2020	600	SUCCESS

Characteristic Analysis and Optimization of Aluminium and Titanium Composed Joining by Friction Stir Welding

1. Background of the Problem

There is a high demand for combination of light weight alloys in modern Technological growth. In the aerospace, automobile and shipbuilding industries there is a need of Combinations of light weight alloys In all these applications it becomes necessary to get the higher performance of the welded joints. The main advantage of using dissimilar materials in welding structure is that, we can take the advantage of the properties of both the materials. Aluminum alloys are widely used in automotive industry, aerospace industry and shipbuilding. Titanium alloys have also attracted much attention in these industries due to their high strength and high corrosion resistance. With the increasing demand for lightweight equipment, these alloys have been increasingly used. In many applications, superior properties of both aluminium alloys and titanium alloys, such as high strength, low weight and low cost are needed. Because of many differences between these two metals, such as differences in crystal lattice, melting temperature, thermal conductivity, and coefficient of linear expansion, it is very difficult to achieve a defect-free joint between these two alloys[1][2]. Friction Stir Welding (FSW) appears as one of the most promising continuous joining techniques. In which the effectiveness of the obtained joint is strongly affected by several geometrical and technological parameters; in particular both rotating speed and feed rate have to be properly chosen in order to obtain effective joints [3].In this Research the experimental characteristic analysis of Aluminium and Titanium composed joint by FSW will be done. Process parameter for FSW will be optimized for getting various material characteristics of joint.

2. Literature Review

Chan et al Experimented FSW on commercially pure titanium with ADC12 cast aluminum alloy using WC-Co tool. Three welding speeds are selected as 60, 90, 120 mm/min. Maximum failure load of 9.39 KN is achieved at 90mm/min. Defects arise at 60mm/min due to insufficient flow of Ti which cause inhomogeneous distribution. At 120 mm/min due to lower heat input and low reaction time for Ti and Al, decrease in tensile strength is observed [4]. Li et al employed the modified butt joint into the FSW of Ti-6Al-4V alloy to Al-6Mg alloy with a special pin plunge setup. The results reveal that the joint mechanical tensile strength can reach more than 92 % of the parent aluminum alloy strength [5]. Yu-hua et al observed Uneven distribution of micro hardness in Lap joint of TC1 Ti alloy and LF6 Al alloys dissimilar materials were subjected to FSW. With the increase of welding speed or decrease of tool rotation the amount of titanium alloy particles stirred into stir zone by the force of tool pin decreases continuously. [6]. Masayuki et al joined ZK60 magnesium alloy and titanium by friction stir welding. In this study the effect of alloying elements on the microstructure of the joint was examined It was found that Zn and Zr of alloying elements of Mg-Zn-Zr alloy improved the tensile strength of titanium and magnesium joints by forming the thin reaction layer at the joint interface.[7] Song and Nakata in 2010 investigated the mechanical properties and the effect of post heat

treatment in the FSW of Inconel 625. They noticed an improvement in mechanical properties after the post heat treatment at 700°C for100h in vacuum.[8]. Sato et al. studied the effect of microstructure on weldment of Inconel 600 alloy in a friction stir welding process using polycrystalline cubic boron nitride (PCBN) tool. They found fine grain structure in stir zone with better mechanical properties compared to the base metal. They also observed that FSW exhibits lower corrosion resistance in stair zone and HAZ[9]. Song and Nakata investigated the mechanical properties and the effect of post heat treatment in the FSW of Inconel 625. They noticed an improvement in mechanical properties after the post heat treatment at 700°C for100h in vacuum [10].The problem has been identified from the literature review that there is a scope of the research in the area of Aluminum and Titanium composed joining by FSW.

3. Objective of the Research

The main objective of this research is to analyse the material characters of Aluminium and Titanium composed joining by Friction stir Welding. Optimization of FSW process parameter will be done for better joint. Mathematical Model will be developed from the optimized result.

Specific Objects

1. To make join Aluminium and Titanium alloy by FSW.
2. To make different samples by optimizing parameters
3. To conduct different Testing Methods
4. To Analyze the Joined material Properties
5. To adapt the optimization Techniques for finding the solution
6. To Formulate the Mathematical Model

4. Methodology

1. Literature Review
2. Observation and Data Collection
3. Making samples by varying process Parameters
4. Conducting Test for samples, The following test will be conducted for the samples
    - 4.1. Tensile Test
    - 4.2. Scanning Electron Microscope Test (SEM)
    - 4.3. Impact Test
    - 4.4. Micro Hardness Test
    - 4.5. Micro Structure Analysis for each Test
5. Optimizing the Parameters by optimization Technique
6. Generating the Mathematical Model
7. Journal Publication
8. Preparing Thesis

5. Work Plan Activity

The Planning schedule for each Research activities have been mentioned below

S.N	Activity	Duration (Month)	Month																	
			2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
1	Literature review	6																		
2	Observation & Data collection	6																		
3	Making samples	2																		
4	Conducting Test and Experiments	4																		
5	Optimizing Parameters	2																		
6	Generating Mathematical Model	10																		
7	Journal Publication	4																		
8	Preparing Thesis	2																		

6. References

1. J. Wild, J.P. Bergmann: Manufacturing of titanium/aluminium and titanium/steel joints by diffusion welding. Welding and Cutting 3, 285-290 (2004).
2. R. Jiangwei, L.I. Yajiang, F. Tao: Microstructure characteristics in the interface zone of Ti/Al diffusion bonding. Materials Letters 56, 647-652(2002).
3. Rhodes, C.G., Mahoney, M.W., Bingel, W.H., Spurling, R.A., Bampton, C.C.,Effects of Friction Stir Welding on Microstructure of 7075 Aluminum, Scripta Materialia, 36: 69-75 (1997)
4. Chen Y.C. and Nakata K.Microstructural characterization and mechanical properties in friction stir welding of aluminum and titanium dissimilar alloys, Materials and design, 30:469-474. (2009)
5. B., Zhang Z., Shen Y., Hub W. and Luo L.Dissimilar friction stir welding of Ti–6Al–4V alloy and aluminum alloy employing a modified butt joint configuration: Influences of process variables on the weld interfaces and tensile properties, Materials and design., 53:838-848.(2014)
6. Yu-hua C., Quan N. and Li-ming K.,Interface characteristic of friction stir welding lap joints of Ti/Al dissimilar alloys, Transactions of nonferrous metals society of china, 22:299-304. (2012)
7. Masayuki Aonumaa and Kazuhiro Nakatab, “Dissimilar metal joining of ZK60 magnesium alloy and titanium by friction stir welding”, Materials Science and Engineering B, Vol. 177, pp. 543-548. (2012)
8. ato Y., Arkom P, Kokawa H, Nelson TW, Steel RJ. Effect of microstructure on properties of friction stir welded Inconel Alloy 600.Materials Sci and Engg A; 477: 250–258. (2008)
9. Song KH, Fujii H, Nakata K. Effect of welding speed on microstructural and mechanical properties of friction stir welded Inconel 600. Materials and Design; 30; 3972–3978.(2009)
10. Song KH and Nakata K. Effect of precipitation on post-heat-treated Inconel 625 alloy after friction stir welding. Materials and Design; 31:2942–2947.(2010)

Reg. No : 91302402003

Anna University

The Syndicate of the Anna University hereby makes known that **BALASUADHAKAR A** *has been admitted to the* **DEGREE OF MASTER OF ENGINEERING** *in* **CAD/CAM** *having satisfactorily completed the prescribed programme of study and having been certified by duly appointed examiners to be qualified to receive the same and having been placed by them in the* **First Class** *at the Examination held in* **June 2004.**

Given under the Seal of the University

Chennai 600 025
India
December 2004

Registrar

Vice-Chancellor

8890958

University of Madras
சென்னைப் பல்கலைக்கழகம்

FACULTY OF ENGINEERING
பொறியியல் புலம்

The Senate of the **University of Madras** *hereby makes known that* **BALASUADHAKAR A** *has been admitted to the*

DEGREE OF BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING

he / she having been certified by duly appointed Examiners to be qualified to receive the same and was placed in the FIRST CLASS *at the Examination held in* APRIL 2002

சென்னைப் பல்கலைக்கழகப் பேரவை, 2002 *ஆம் ஆண்டு ஏப்ரல் மாதம் நடந்த* இயந்திரப் பொறியியல் *தேர்வில்* பாலசுதாகர் ஏ. *என்பவர் முதல் வகுப்பில் தேர்ச்சி பெற்றார் என்று தக்க தேர்வாளர்கள் சான்றளித்தபடி,* பொறியியல் இளையர் *என்னும் பட்டத்தை அவருக்குப் பல்கலைக்கழக இலச்சினையுடன் வழங்குகிறது.*

Given under the seal of the University

Registrar
பதிவாளர்

Vice-Chancellor
துணைவேந்தர்

Dated: 12-09-2002
நாள்:

REGISTER NO. 1023934

D.C. A00133321

STATE BOARD OF TECHNICAL EDUCATION AND TRAINING

DEPARTMENT OF TECHNICAL EDUCATION

CHENNAI - 600 025, TAMIL NADU.

This Diploma in

MECHANICAL ENGINEERING

is awarded to

BALASUADHAKAR A

who has completed the prescribed course of study in the above discipline and passed in FIRST CLASS WITH HONOURS *in the examinations held in*

APRIL 1999

Chairman
Board of Examinations
Tamil Nadu

BOARD OF EXAMINATIONS • TAMILNADU • 22 JUL 1999

Minister for Education
and Chairman
State Board of Technical Education
and Training, Tamil Nadu.

ANNA UNIVERSITY
CHENNAI
M.E. DEGREE EXAMINATIONS
CONSOLIDATED STATEMENT OF MARKS

Folio No. A716722

NAME OF THE CANDIDATE	BALASUADHAKAR A	REGISTER NO.	91302402003
COLLEGE OF STUDY	913: R.V.S College of Engineering and Technology	MONTH & YEAR OF LAST APPEARANCE	June 2004
PROGRAMME & SPECIALIZATION	M.E. CAD/CAM	REGULATIONS	2002

SEM.	SUBJECT CODE	SUBJECT TITLE	MAX	MIN	MARKS SECURED	MONTH & YEAR OF PASSING
01	CD133	Finite Element Analysis	100	50	060	Dec 2003
01	CD142	Mechanical Vibrations	100	50	055	Jun 2004
01	CD143	CAD Lab	100	50	082	Dec 2002
01	ED132	Computer Applications in Design	100	50	058	Apr 2003
01	PD132	Concurrent Engineering	100	50	058	Apr 2003
01	PE039	Robotics and Sensors	100	50	059	Apr 2003
01	ID036	Total Quality Management	100	50	059	Dec 2002
02	CD035	Computer Integrated Manufacturing Systems	100	50	059	Apr 2003
02	ED043	Product Design and Development Strategies	100	50	066	Dec 2003
02	ED142	Computer Integrated Design	100	50	050	Dec 2003
02	PE034	Manufacturing Information Systems	100	50	057	Apr 2003
02	PE049	CAM Laboratory	100	50	078	Apr 2003
02	ED044	Advanced Strength of Materials	100	50	058	Apr 2003
02	PE052	Manufacturing System and Simulation	100	50	051	Apr 2003
03	ED143	Design for Manufacture	100	50	065	Dec 2003
03	PE050	Data Communication in CAD/CAM	100	50	060	Jun 2004
03	PE141	Flexible Competitive Manufacturing System	100	50	068	Dec 2003
04	CM233	Project Work	600	300	525	Jun 2004

End of Statement

Classification : FIRST CLASS

Total Marks : 1568 / 2300

Percentage (rounded to nearest integer) : 68

Controller of Examinations * Anna University * Chennai-600 025.

Medium of Instruction : ENGLISH

Chennai - 600 025.
Date : 15/10/2004

Controller of Examinations

2001 / 0007875

சென்னைப் பல்கலைக்கழகம்

UNIVERSITY OF MADRAS

BE DEGREE SEMESTER EXAMINATION

CONSOLIDATED STATEMENT OF MARKS

BATCH 98-99

NAME OF CANDIDATE	SEX	REGISTER NO.	CENTRE AND NAME	BRANCH NAME
BALABUDHAKAR A (09-03-79)	M	8998958	1067 ANNAI TERESA COLLEGE OF ENGINEERING CUDDALORE - 607 002	MECHANICAL ENGINEERING

	NAME OF SUBJECT	SUBJECT CODE	MARKS SECURED	MAX. MARKS	MONTH & YEAR	TERM	NAME OF SUBJECT	SUBJECT CODE	MARKS SECURED	MAX. MARKS	MONTH & YEAR
3	THERMODYNAMICS	3MB	051	100	042K	6	(I) MECHANICAL LAB - I (II) FLUID MACHINERY LAB.	6M1	092	100	0401
3	FLUID MECHANICS	3MC	059	100	1099	6	(I) WORKSHOP III (II) METROLOGY LAB.	6M2	087	100	0401
3	MATHEMATICS - III	3IA	045	100	1099	7	HEAT AND MASS TRANSFER	7MA	055	100	1001
3	ELECTRICAL TECHNOLOGY	3IC	045	100	1099	7	DESIGN OF TRANSMISSION SYSTEM	7MC	045	100	1001
3	ENGINEERING MATHEMATICS	3IJ	045	100	042K	7	INTERNAL COMBUSTION ENGG	7ME	048	100	1001
3	PHYSICAL SCIENCES	3IK	058	100	0401	7	NON TRADITIONAL MACHINING TECHNIQUES	7IE	066	100	1001
3	ELECTRONICS AND MICROPROCESSOR	3IM	053	100	042K	7	COMPUTER AIDED DESIGN & COMPUTER AIDED MANUFACTURING	7IX	076	100	1001
3	ENGINEERING MECHANICS - I (STATICS)	3IT	045	100	1099	7	OPERATION RESEARCH	0IH	055	100	1001
4	THERMAL ENGINEERING	4MB	058	100	042K	7	CAD/CAM & MICROPROCESSOR LAB	7M1	084	100	1001
4	MATHEMATICS -IV	4IA	061	100	042K	7	MECHANICAL LAB - II	7M2	088	100	1001
4	COMPUTER PROGRAMMING	4IB	053	100	102K	8	STATISTICAL QUALITY CONTROL & RELIABILITY ENGINEERING	8MA	052	100	0402
4	MECHANICS OF SOLIDS	4IH	068	100	042K	8	PRINCIPLES OF MANAGEMENT & INDUSTRIAL PSYCHOLOGY	8MB	064	100	0402
4	ENGINEERING MECHANICS - II (DYNAMICS)	4II	068	100	042K	8	PRODUCTION PLANNING AND CONTROL	8IE	059	100	0402
4	MACHINE DRAWING	4IJ	05A	100	042K	8	AUTOMOBILE ENGINEERING	0IA	073	100	0402
4	(I) STRENGTH OF MATERIALS LAB & (II) FLUID MACHANICS LAB	4M1	086	100	042K	8	MODERN MANUFACTURING SYSTEMS	0ID	059	100	0402
4	COMPUTER LABORATORY	4M2	077	100	042K	8	PROJECT WORK AND VIVA VOCE	8M9	194	200	0402
5	GAS DYNAMICS AND JET PROPULSION	5MA	067	100	102K						
5	MATERIAL & METALLURGICAL SCIENCE	5MC	063	100	102K						
5	MECHANICS OF MACHINES - I	5MD	055	100	0401						
5	PRODUCTION TECHNOLOGY - I	5ME	057	100	102K						
5	NUMERICAL METHODS	5IA	064	100	102K						
5	INSTRUMENATION AND CONTROL SYSTEMS	5IG	047	100	102K						
5	INSTRUMENTATION/DYNAMICS & METALLURGY LABORATORY	5M1	086	100	102K						
5	WORKSHOP - II	5M2	088	100	102K						
6	ENGINEERING ECONOMICS & ENERGY MANAGEMENT	6MA	079	100	0401						
6	TURBO MACHINES	6MB	062	100	0401						
6	MECHANICS OF MACHINES - II	6MC	059	100	0401						
6	MACHINE DESIGN AND DRAWING	6MD	055	100	0401						
6	PRODUCTION TECHNOLOGY - II	6ME	058	100	0401						
6	POWER PLANT ENGINEERING	6MF	058	100	0401						

NOTE : THE MARKS SECURED IN THE FIRST YEAR SUBJECTS NOT INCLUDED IN THE TOTAL MARKS FOR CLASSIFICATION AS PER REGULATIONS

PASSING MINIMUM MARKS
THEORY – 40% PRACTICAL – 50% FOR MATHS PRIVATE CANDIDATES
THEORY – 40% PRACTICAL – 60% FOR NON MATRICULATION CANDIDATES

CLASS OBTAINED: FIRST CLASS

TOTAL MARKS IN WORDS: 3009

THREE ZERO ZERO NINE

UNIVERSITY BUILDINGS
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DATE OF ISSUE 15-07-2002

EXAMINATION SECTION

R.V.S. COLLEGE OF ENGINEERING AND TECHNOLOGY

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Transfer Certificate

No. 8 Admission No. 2K2064

01. Name of the student (in block letters) : A. BALASUADHAKAR

02. Name of the Parent : T. Arumugam

03. Date of birth as entered in the Admission Register : 9.3.1979 Ninth March Nineteen Seventy Nine

04. Nationality, Religion & Community : Indian-Hindu-Thuluvavellalar-B.C

05. Admission No. (if any) : 2K2064

06. Date of Admission : 25.9.2002

07. Class in which the student was studying at the time of leaving (in words) : final year M.E CAD/CAM

08. Whether passed / promoted : Passed

09. Whether the student has paid all the Fees due to the Institution : yes

10. Date on which the student actually left the Institution : June 2004

11. Date on which the application for Transfer Certificate was made : 17.11.2004

Date: 17.11.2004
(with seal)

R.V.S. COLLEGE OF ENG & TECH * DINDIGUL 624 005

Principal PRINCIPAL
R. V. S. College of Engineering & Technol
Dindigul - 624 005

DIRE DAWA INSTITUTE OF TECHNOLOGY
ድሬ ዳዋ ቴክኖሎጂ ኢንስቲትዩት
DIRE DAWA UNIVERSITY
ድሬ ዳዋ ዩኒቨርሲቲ

Human Resource Management Team
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Ref.DDIT/HRM/1355 /2012 E.C
ቁጥር
Date July.06/2020 G.C.
ቀን

To whom so ever it may concern

This is to certify that **Mr.Arumugam Balasuadhakar** who has been an employee of Dire Dawa Institute of Technology, Dire Dawa University has requested us to issue a letter stating his monthly salary and work experience in Dire Dawa Institute of Technology, Dire Dawa University on July.06/2020 G.C.

Accordingly, **Mr.Arumugam Balasuadhakar** has been working as Lecturer from October 15/2012 G.C. upto till date in the School of Mechanical and Industrial Engineering Dire Dawa Insitute of Technology, Dire Dawa University. He is earning a gross salary of **2,765.00 (Two Thousand Seven Hundred Sixty Five USD only)** per month. Wishing him all the best and success in his future endeavor. We gave his this testimony up on his request.

With Best Regard

ABEBE ALEMAYEHU
የድሬዳዋ ቴክኖሎጂ ኢንስቲትዩት
የሰው ሀብት ስራ አመራር ቡድን መሪ
Dire Dawa Institute of Technology
Human Resource Management Team Leader

Federal Democratic Republic of Ethiopia
Dire-Dawa University

OXFORD ENGINEERING COLLEGE

(An ISO : 9001 - 2000 Certified & NBA Accredited Institution)

Pirattiyur, Tiruchirappalli - 620 009.

ESTD : 1998

OEC ESTD : 1998

28.02.2011

OEC / EST / 069 / 2010-11

Experience Certificate

Name	:	**A.Balasuadhakar**
Designation	:	**Assistant Professor**
Department	:	**Mechanical Engineering**
Date of joining	:	**01.02.2010**
Date of Relieving	:	**28.02.2011**
Reason	:	**Personal**
Conduct and character	:	**Good**

OXFORD ENGG. COLLEGE PIRATTIYUR, TIRUCHIRAPPALLI-620 009.

PRINCIPAL

OXFORD ENGG. COLLEGE
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SAMS

COLLEGE OF ENGINEERING & TECHNOLOGY

PANAPAKKAM, CHENNAI - 601102

(Approved by AICTE & Affiliated to Anna University, Chennai)

SCET / FACULTY / EC / 024 29.01.2010

EXPERIENCE CERTIFICATE

This is to certify that **Mr.A.Balasuadhakar**, was working in our Institution as a Faculty in the Department of Marine Engineering from **15.02.2006 to 29.01.2010**.At the time of relieving, his designation is an **Assistant Professor**. His conduct and character has been good.

SAMS COLLEGE OF ENGINEERING & TECHNOLOGY CHENNAI-601 102

PRINCIPAL

PRINCIPAL
SAMS COLLEGE OF ENGG & TECH
CHENNAI - 601 102

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Website: www.samsengineering.or

EDAYATHANGUDY G.S.PILLAY ENGINEERING COLLEGE

NAGAPATTINAM - 611 002.

(An ISO 9001:2000 Certified Institution)

(Approved by AICTE, New Delhi)

(Approved by Govt. of Tamil Nadu - Affiliated to Anna University, Chennai)

ISO 9001:2000

Dr. R. Karunanithi, M.E., Ph.D.,

Principal

EGSPEC/STAFF/CER/081 21.08.2006

EXPERIENCE CERTIFICATE

This is to certify that Mr. A.Balasuadhakar, was working in our Institution as a Lecturer in the Department of Mechanical Engineering from 07.02.2005 to 09.02.2006.

EDAYATHANGUDI G.S. PILLAI ENGINEERING COLLEGE NAGAPATTINAM 611 002

21/2/06

PRINCIPAL

PRINCIPAL
Edayathangudy,
G.S.Pillay Engineering College,
Nagapattinam.

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web site : www.egspec.org

E. Mail : ccetodc @ sanchar . net
GRAM : COLLEGE ODC
☎: 04553 - 240229
241178

CHRISTIAN COLLEGE OF ENGINEERING & TECHNOLOGY

Dindigul Road, ODDANCHATRAM - 624619. Dindigul District, Tamilnadu, S.India.

Padma Bushan **Dr. JACOB CHERIAN.,** B.Sc., M.B.B.S.,
FRCS(Ed)., FRCS(Gl).,FICS.,FACS.,FAIS.,
Founder & Chairman

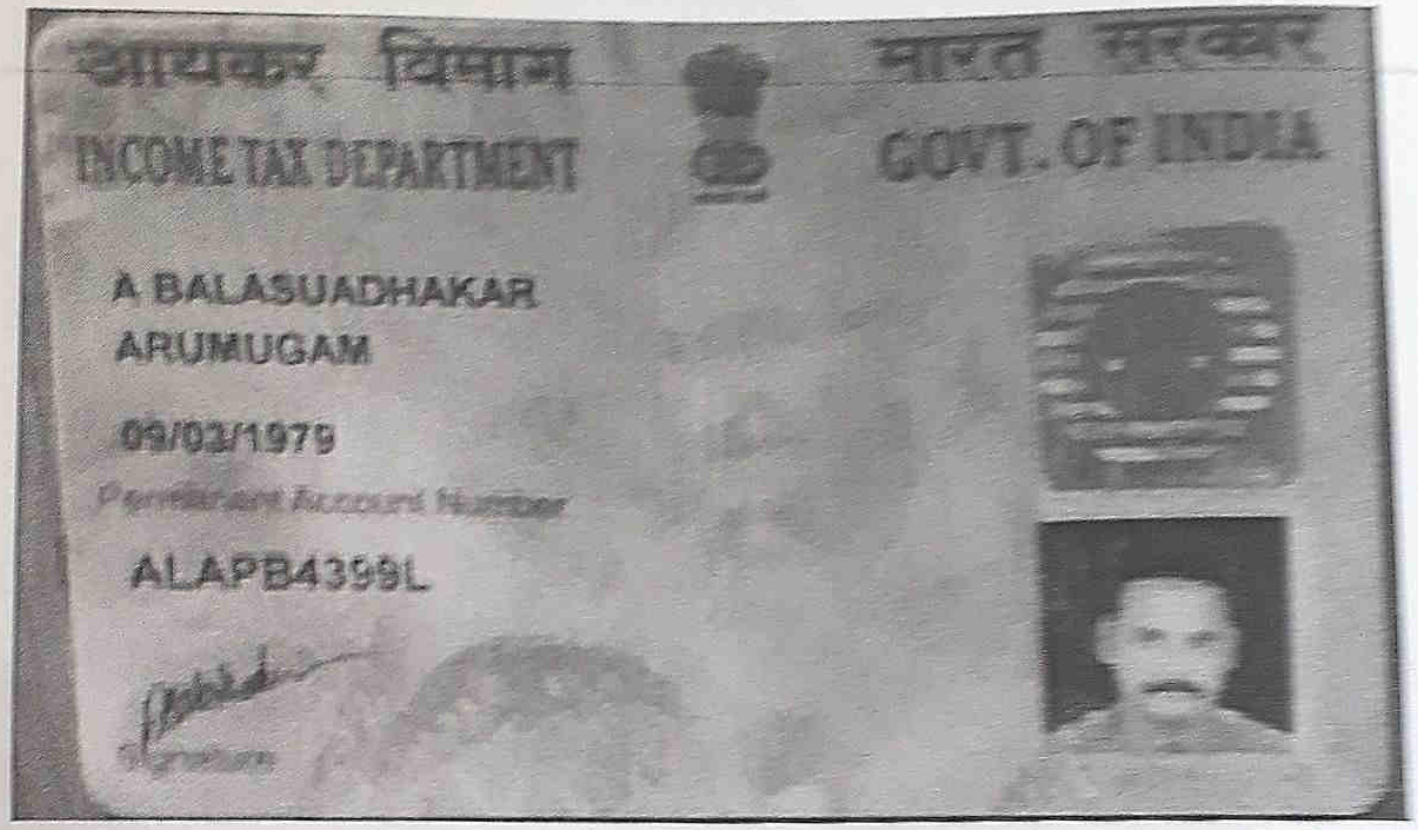
Date: 16.11.04

EXPERIENCE CERTIFICATE

This is to certify that **Mr. A. BALA SUADHAKAR** has been working as a Lecturer at **GENERAL ENGINEERING** Department from 02.08.2004 to 15.11.2004 in our College. During this period he has rendered the works well and his conduct and character have been good.

PRINCIPAL

PRINCIPAL
CHRISTIAN COLLEGE OF ENGG.&TECH.,
ODDANCHATRAM - 624 619.
Dindigul Dist.



Self Attested
P Baladhakar
08/11/2021

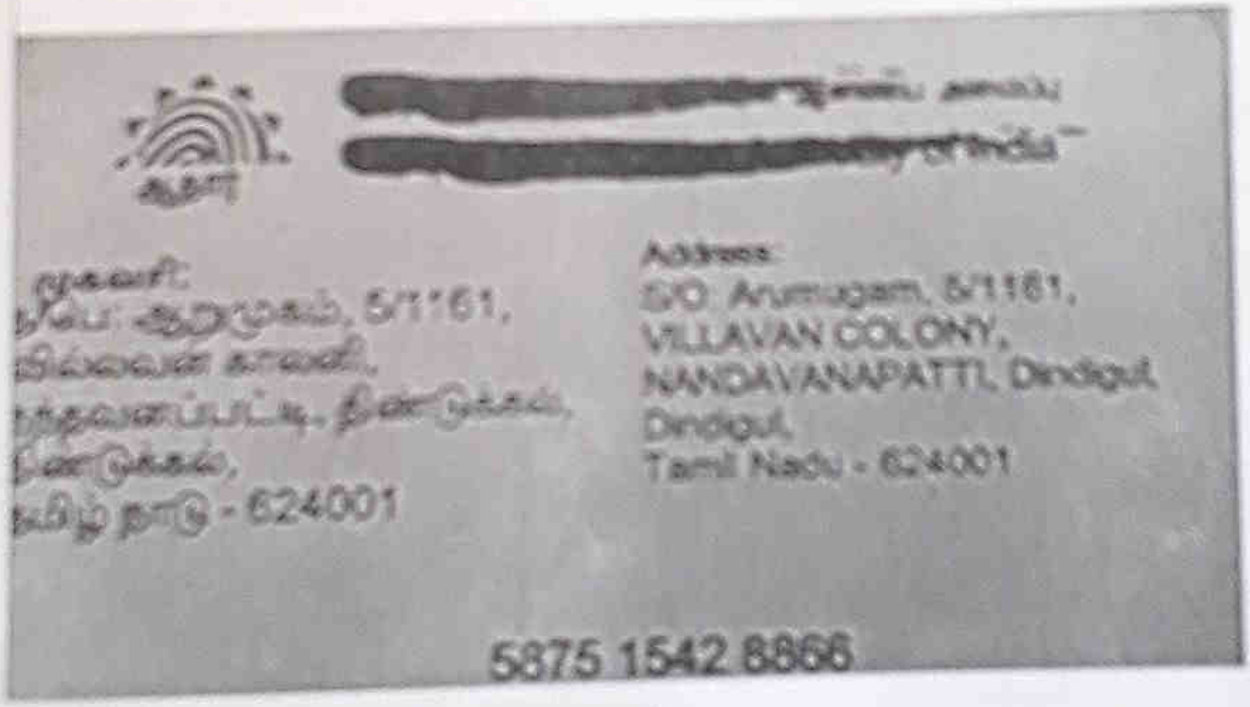
Balasubhakar Arumugam

DOB: 09/03/1979

/ MALE

5875 1542 8866

எனது ஆதார், எனது அடையாளம்



Address:
S/O Arumugam, 5/1161,
VILLAVAN COLONY,
NANDAVANAPATTI, Dindigul,
Dindigul,
Tamil Nadu - 624001

5875 1542 8866

Self Attested

08/12/2021

ANNEXURE-I

CERTIFICATE FROM THE ORGANISATION WHERE THE CANDIDATE IS EMPLOYED

Certified that Mr./~~Ms.~~/~~Mrs.~~ A.BALASUNDHAKAR is employed as LECTURER (Designation) in the SOLID MECHANICS AND DESIGN (Department/~~Division Name~~) of SCHOOL OF MECHANICAL AND INDUSTRIAL ENGENEERING (Institution/Industry Name). DIRE DAWA UNIVERSETY ETHIOPIA

We have no objection in forwarding his/her application for the Ph.D. Research Programme.

FOR FULL TIME:

The candidate will be sanctioned leave for the duration of the research programme and will be relieved from duty from _____ to _____ to undertake the full time research work in the University.

FOR PART TIME:

The candidate will be permitted to undertake part time study in the University/College and will be allowed to be present for discussions with the supervisor, attending course works, conduct of experiments and participations in seminars and related presentations. Further the required facilities at our organization will also be provided to the candidate for doing research.

Date: 07/12/2020

Signature of the Head of Organization with office seal

Dean, School of Mechanical and Industrial Engineering