



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

APPLICATION FOR ADMISSION TO Ph.D. PROGRAMMES

Date of Application:23-12-2020

Department	MECHANICAL ENGINEERING	Application No.	202020176
Area of Research	SUPERSONIC COMBUSTION	Research Mode	PART TIME

Name :A C RAJESH
Date of Birth / Age :07-01-1980 / 41 Years
Gender :MALE
Category :OC
e-Mail ID :rajeshacinbox@gmail.com
Mobile :9080849678



Father's/Husband's Name	V ATCHUTHAN NAIR	Father's/Husband's Occupation	RETIRED JUNIOR ENGINEER
Family Income	4LAKH	Residential Type	RURAL
Birth Place	NAGERCOIL	Mother Tongue	MALAYALAM
Religion	HINDU	Martial Status	SINGLE
Aadhaar No.	740832347868	PAN No.	ALXPR5799M
Physically Challenged	NO	Type of Disability	-
Address for Communication: OLD NO -10-15,NEW NO-10-17A,NANDAVANAM FORT ERANIEL ,KANDANVILAI P.O. KALKULAM/ERANIEL/NAGERCOIL KANYAKUMARI DISTRICT DISTRICT TAMIL NADU INDIA Pin-629810		Permenant Address: OLD NO -10-15,NEW NO-10-17A,NANDAVANAM FORT ERANIEL ,KANDANVILAI P.O. KALKULAM/ERANIEL/NAGERCOIL KANYAKUMARI DISTRICT DISTRICT TAMIL NADU INDIA Pin-629810	

Qualification						
Degree	Discipline	College/university	Year Passed	AVG/CGPA	Class	Mode
M-TECH	THERMAL ENGINEERING	BHARAT UNIVERSITY	2019	7.3 CGPA	FIRST CLASS	CORRESPOND
BE	MECHANICAL ENGINEERING	ANNA UNIVERSITY/DR SIVANTHI ADITANAR COLLEGE OF ENGINEERING/DR SIVANTHI	2005	68%	FIRST CLASS	REGULAR
DIPLOMA	MECHANICAL ENGINEERING	STATE BOARD OF TECHNICAL EDUCATION	2002	79.5%	FIRST CLASS WITH HONORS	REGULAR
SSLC	HIGHER SECONDARY	SECONDARY SCHOOL/GHSS ERANIEL	1996	69%	FIRST CLASS	REGULAR

Experience				
Organization	Designation	Experience From	Experience TO	Work Nature

RENAULT NISSAN TECHNOLOGY & BUSINESS CENTRE INDIA PVT LIMITED	SENIOR ENGINEER	2011-07-27	2020-12-23	PRESS DIE DESIGN/CAM
HYUNDAI MOTORS INDIA PVT LTD	ASSISTANT ENGINEER	2007-06-23	2011-06-17	PRESS DIE /CAM
HIGH SPEED MACHINING	ENGINEER	2006-03-01	2007-03-01	AEROSPACE DESIGN
DIE TECH INDIA PVT LTD	GET	2005-07-01	2006-02-01	LOWER PRESSURE DIE CASTING

Payment Details				
Transaction ID	Reference	Date of transaction	Amount	Status
202020176_201223135800	VINB9587034110	23-12-2020	600	SUCCESS

Numerical Investigations on Mixing and Combustion in Scramjet Engine Combustion Chambers using Strut Injectors

Rapid mixing of supersonic streams is vital in many advanced aerospace systems and the importance of the same is increasingly appreciated because of the renewed interest in hypersonic flight, which necessitates combined cycle propulsion systems at high altitudes. In the air-breathing stage of the hypersonic vehicles, the performance of the conventional ramjet engine falls below unacceptable level due to dissociation and shock losses, which necessitates the introduction of supersonic combustion ramjet engine called Scramjet engine. The most challenging part of scramjet technology is the design and development of the supersonic combustor. The rapid mixing of air and fuel issuing at high speed within a short combustor with acceptable stagnation pressure loss and effective flame stabilization is the fundamental constraint in the design of supersonic combustor. The fuel injection system for supersonic combustion systems has been studied for decades with the objective of proper mixing and complete combustion. To achieve fuel injection in the supersonic core region, strut injections have been used to improve fuel distribution and mixing.

The present research work focusses on the various strut injection schemes in a 2D combustors under non-reacting and reacting flow fields. The numerical code of the study will be validated with the experimental data. The analysis will be done using the commercially available AnsysFluent software. The key parameters include, wall pressures, midline pressures, qualitative and quantitative mixing, combustion efficiency, and the total pressure loss across the combustor. The results of the study would be useful for supersonic combustion applications.



Dr. S. Jeyakumar
Professor and Head,
Aeronautical Engineering,
Kalasalingam Academy of Research and Education.



Bharath

INSTITUTE OF HIGHER EDUCATION AND RESEARCH

(Declared as Deemed-to-be-University, u/s 3 of the UGC Act, 1956)

173, Agharam Road, Chennai - 600 073, Tamil Nadu, India

DEGREE EXAMINATION CONSOLIDATED GRADE SHEET

272054

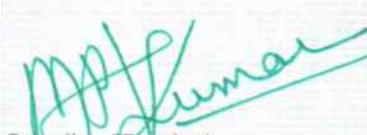
Aadhaar No.:

Name	RAJESH A C	Batch	Part Time-2016-2019	
Date of Birth	07.01.1980	Register Number	P16ME906	
College of Study	BHARATH INSTITUTE OF SCIENCE AND TECHNOLOGY	Month & Year of Examination	MAY19	
Degree & Branch	M.TECH-Thermal Engineering	Date of Publication	20-JUN-2019	

S	SCORE	SUBJECT TITLE	C	T	Grade Reg. Arr	M/Y	S	SCORE	SUBJECT TITLE	C	T	Grade Reg. Arr	M/Y
1	MMA109	Mathematical Methods	4	PM	E	N16							
1	MME101	Fuels Combustion and Emission Control	3	PC	C	N16							
1	MME102	Advanced Fluid Mechanics	3	PC	D	N16							
1	MME1L1	Thermal Laboratory	2	PC	S	N16							
2	MME201	Fluid Mechanics of Turbo Machine	3	PC	B	M17							
2	MME202	Instrumentation	4	PC	B	M17							
2	MME203	Computational Fluid Dynamics	3	PC	B	M17							
2	MME2L1	Heat Transfer Laboratory	2	PC	A	M17							
3	MME301	Advanced Refrigeration and Air-Conditioning Engineering	3	PC	B	N17							
3	MME302	Environmental Pollution & Control	3	PC	B	N17							
3	MME303	Advanced Heat Transfer	3	PC	D	N17							
3	MME304	Analysis of Thermal Power Cycle	3	PC	E	N17							
4	MME404	Advanced IC Engines	3	PC	D	M18							
4	MME4E1	MMD461 Design of Pressure Vessels and Piping	3	PE	B	M18							
4	MME4E2	MME454 Boiler Auxiliaries & Performance Evaluation	3	PE	C	M18							
5	MME5E3	MME559 Non Destructive Testing and Failure Analysis	3	PE	D	N18							
5	MME5E4	MMD557 Advanced Material Science& Failure Analysis in Mech. Design	3	OE	C	N18							
5	MME5P1	Project Work Phase-I	6	PR	B	N18							
6	MME6P1	Project Work Phase - II	12	PR	B	M19							
*** End of statement ***													



CLASS - FIRST CLASS

Semester	I	II	III	IV	V	VI	VII	VIII	IX	X	 Controller of Examinations Date of Issue: 24 JUN 2019	
Cr. Registered	12	12	12	9	12	12						
Cr. Earned	12	12	12	9	12	12						
GPA	6.58	8.17	6.75	7	7.25	8						
Total Cr. Earned	69/69			CGPA	7.3 / 10.00			Per (%)	68%			



Bharath

INSTITUTE OF HIGHER EDUCATION AND RESEARCH BHARATH INSTITUTE OF SCIENCE & TECHNOLOGY

(Declared under section 3 of the UGC Act 1956)

No. 173, Agharam Road, Selaiyur, Chennai - 600 073, Tamil Nadu, India.

TRANSFER CERTIFICATE

SL.NO: TC191630

Name of Student : RAJESH A C
Register No : P16ME906
Degree : Master of Technology
Course : Thermal Engineering
Name of Parent / Guardian : Atchuthan Nair .V
Nationality and Religion : Indian - Hindu
Community : OC
Date of Birth (in words & Figures) : 07.01.1980 (Zero Seven-Zero One -One Nine Eight Zero)
Date of Admission to this College : 27.08.2016
Year / Semester to which the student was admitted : 1st year -1st Sem
Semester in which the student was studying at the time of leaving : 3rd year -6th Sem
Whether the student has qualified for promotion to a higher semester / studies : Refer to Mark Sheet
Whether the student has paid all the fees due to the college : Yes
Date on which the student actually left the college : 27.04.2019
Date of issue of Transfer Certificate : 17.06.2019
Conduct of the student : GOOD
Medium of Instruction : English
Mode of study : Part Time
Other information : Attendance Completed as per norms



DEAN ENGINEERING
BHARATH INSTITUTE OF SCIENCE & TECHNOLOGY
SELAIYUR POST, CHENNAI-600 073,
Principal / Dean



NEW
THINKING.
NEW
POSSIBILITIES.

HR/EST/SCT/124

17th June, 2011

SERVICE CERTIFICATE

Name : Rajesh A C
ID No : 270873
Designation : Assistant Manager
Department : Press Shop (Die Design)
Date of Joining : 1st June, 2007
Date of Relieving : 17th June, 2011
Reasons for leaving : Resignation
Last Drawn CTC : ₹. 54,260 p.m.

(Rupees Fifty Four Thousand Two Hundred Sixty Only).

For **HYUNDAI MOTOR INDIA LTD.,**

(R Rajakumar)
General Manager - HR

NEW THINKING.
NEW POSSIBILITIES..

Hyundai Motor India Ltd.

Regd. Office & Factory : Plot No. H-1, SIPCOT Industrial Park, Irungattukottai,
Sriperumbudur Taluk, Kancheepuram Dist., Tamil Nadu - 602 117. India.
Tel : 044-47109000. Fax : 044-47100400.

आयकर विभाग
INCOME TAX DEPARTMENT



भारत सरकार
GOVT. OF INDIA

A C RAJESH
ATCHUTHAN NAIR
07/01/1980
Permanent Account Number
ALXPR5799M



Signature

In case this card is lost / found, kindly inform / return to :
Income Tax PAN Services Unit, UTITSL
Plot No. 3, Sector 11, CBD Belapur,
Navi Mumbai - 400 614.

इस कार्ड के खोने/पानेपर कृपया सूचित करें/लौटाएं :
आयकर पैन सेवा यूनिट, व्डीयू.टी.एस.एल.
प्लॉट नं: ३, सेक्टर ११, सी.बी.डी. बेलपुर,
नवी मुंबई-४०० ६१४.

A C Rajesh



India Driving Licence(Tamilnadu)

Form 7

[D.O] 25/01/2002

End.No. TN74-DL-D-0000226/2009-07-07/2009-12-31:09 PM
Date of issue of the licence as a witness
IMV 25/01/2002 TN74

D.L. No. TN74 20020000262
Name A C RAJESH
S.D.W. of V ATCHUTHAN NAIR
Address
368, K N S K POLYTECHNIC
V O C NAGAR, CHENBAGARAMANPUTHOOR
K K DIST
Camp. Add.



Non-Transport Veh. Valid upto 24.01.2022



Signature
Signature of the holder

Signature
Signature of the issuing authority

Date of Birth 07/01/1980 B.G.

Attachments

Signature

ANNEXURE-I

CERTIFICATE FROM THE ORGANISATION WHERE THE CANDIDATE IS EMPLOYED

Certified that Mr./Ms./Mrs. A. C. RAJESH is employed as SENIOR ENGINEER (Designation) in the PRODUCTION - STAMPING - BP4 (Department/Division Name) of Renault Nissan Technology and Business centre (Institution/Industry Name). India Pvt Ltd

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

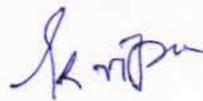
FOR FULL TIME:

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: 23 - Dec - 2020



Signature of the Head of Organization with office seal

**Renault NissanTechnology &
Business centre India Pvt Ltd.**

TP2/1 Natham , Subpost office,
Mahindra world city,
Chelgalpattu, Kanchipuram Dist.