

**One Day National level Workshop on
"Taming the dust: Minimizing Brake Particulate Matter Emission"**

22nd Aug., 2024

Events Schedule

09.00 - 09.30 am	Registration	
09.30 to 10.15 a.m	Inauguration and Keynote address	Mr. Prakash Anantharaman, Vice President (R & D), Renault Nissan Technology & Business Center India
10.15 to 10.30 a.m	Tea Break	
10.30 to 11.15 a.m	Mr. Gopala Krishnan.V, General Manager, Apache Friction R&D Brakes India Ltd, Chennai	Brake Emissions- Evaluation & Control methods
11.15 to 12.00 p.m	Dr. Navnath Kalel Assistant Manager (R&D) Friction Products Section Suprajit Engineering Limited, Banglore	Development of Cu free brake pads and Brake particulate matter emission
12.00 to 12.45 p.m	G Vijay Sankar Principal Engineer Materials Technology Mahindra Research Valley, Mahindra & Mahindra Ltd., Chengalpattu	Taming the dust through the sustainable brake rotor development
12.45 to 01.45 p.m	Lunch Break	
01.45 to 2.30 p.m	Mr. Saravanakumar Subbu, Deputy General Manager Chassis Engg - PF ASE RAE Division Renault Nissan Technology Business India Ltd	Brake Emissions and impacts on NVH Performance -an Overview
02.30 to 03.15 p.m	Mr. Nirmalendu Chatterjee, Global Sales Leader for ITT Friction Technology	Global Trends of Automotive Market & Requirements of Particles engineering
03.15 to 03.30 p.m	Tea Break	
03.30 to 04.00 p.m	Valedictory function	

PREAMBLE

The Department of Mechanical Engineering has organized one day National level workshop on “Taming the dust: Minimizing brake particulate matter emission” held on 22.08.2024 at **B. S. Abdur Rahman Crescent Institute of Science and Technology**, Chennai, in Association with **SAE Southern section Mahindra Worldcity division**. Total 54 participants registered for this workshop including participants from industries, academicians, research scholars and students.

Industry participants	- 26
Mando participants (operating engineers)	- 17
External Research Scholar	- 3
Internal faculty	- 7
Internal student	-1
Total	-54

Brochure of the seminar

ABOUT THE WORKSHOP

Brake systems, while critical to vehicular safety are a significant contributor to particulate matter (PM) pollution. This workshop will focus on the technical aspects of brake-induced PM emissions, exploring their formation mechanisms, characterization, and mitigation strategies. It delves into the complex of brake-induced PM emissions including their composition, sources and environmental impact. The workshop also explores emerging technologies and materials for brake systems that can reduce PM emissions without compromising performance. It further shares real-world examples of successful initiatives to reduce brake PM emissions. Finally, the workshop fosters a platform for collaboration among stakeholders to drive research, development, and implementation of effective solutions. Join us in this crucial endeavour to create cleaner and healthier cities by taming the dust from our brakes.

PARTICIPANTS

- Faculty members and students from various institutions
- Researchers Pursuing Research in the area of Friction Materials
- R & D Personnel from Friction Industries

REGISTRATION

The registration fee

Industry Participants	: Rs.1,500/-
Faculty & Researchers from Academic Institutions	: Rs.750/-
Students from Academic Institutions	: Rs.500/-
For SAE Members	: Rs.250/-

Online payment (NEFT Transfer). The bank details are:

Bank Name & Branch:	Indian Overseas Bank, Vandalur
A/C No:	165701000019388
IFSC Code:	IOBA0001657
Beneficiary Name:	Dept. of Mechanical Engineering

CHIEF GUEST



Mr. Prakash Anantharam
Vice President (R & D),
Renault Nissan Technology & Business Center,
Chennai, India

RESOURCE PERSONS



Mr. G. Vijay Sankar
Principal Engineer | Materials Technology
Mahindra Research Valley, Mahindra & Mahindra Ltd.,
Mahindra World City, Chengalpattu, India.



Mr. V. Gopala Krishnan
General Manager
Brakes India Ltd,
Chennai, India.



Dr. Navnath Kale
Assistant Manager (R&D)
Friction Products Section
Suprajit Engineering Limited, Bangalore, India.



Mr. Nirmalendu Chatterjee
Global Sales Leader for IIT Friction Technologies,
Pune, Maharashtra,
India.



Mr. G. Mr. Sarayanakumar Subbu
Deputy General Manager
Chassis Engg - PF ASE RAE Division
Renault Nissan Technology & Business India Ltd.,


REGISTRATION LINK

https://docs.google.com/forms/d/e/1FAIpQLSe1QfrUy1U854PgNTtDES8yYa6jkriv2Dwb4nzJlgOXXtq/viewform?c=0&c=0&w=1&flrm=0&spmail_form_link

One Day National Level Workshop
on


TAMING THE DUST: MINIMIZING BRAKE PARTICULATE MATTER EMISSIONS

22nd August 2024



Organized by
Department of Mechanical Engineering
B.S. Abdur Rahman
Crescent
Institute of Science & Technology
Chartered by the University of Madras, 1984

In Association with
SAEINDIA
SOUTHERN SECTION MWC DIVISION



Department of Mechanical Engineering
B.S. Abdur Rahman Crescent Institute of Science & Technology, Vandalur, Chennai 600 048

ABOUT THE INSTITUTE



B.S. Abdur Rahman Crescent Institute of Science and Technology is a renowned Institution located at the greenest spot of Chennai near Vandalur Zoo since 1984. Through our long history of 40 years of excellence, the Institution has offered access to a wide range of academic opportunities. We offer 32 Undergraduate programmes, 25 Postgraduate programmes, and Ph.D. in all the departments. This institution is a rising stalwart in higher education with promising Quality, Security and Placement. Most of our UG programs are accredited by NBA. The institute is accredited with "A" Grade by NAAC and Ranked 102 by NIRF under engineering category.

ABOUT DEPARTMENT



The department of Mechanical Engineering started in 1984, is one of the oldest departments of this Institution. A high degree of professionalism is inducted to the students through student chapters of professional associations such as American Society of Mechanical Engineers (ASME), Society of Automotive Engineers (SAE), Indian Society for Heating Refrigeration and Air-conditioning (ISHRAE) and Society of Mechanical Engineers. The department organizes programmes to provide the students with industrial and practical experience through training and project work in industries to meet the industrial requirements and face real life situations. The Department of Mechanical Engineering offers the following programmes at undergraduate and postgraduate level:

- B.Tech. Mechanical Engineering
- M. Tech. CAD-CAM
- Ph.D. - Full Time/ Part Time

PATRON

Mr. BSA Arif Buhary Rahman, President
Mrs. Qurrath Jameela, Chancellor
Mr. Abdul Qadir Abdul Rahman Buhari, Pro-Chancellor

CO-PATRON

Dr. T. Murugesan, Vice-Chancellor
Dr. N. Thajuddin, Pro-Vice Chancellor
Dr. N. Raja Hussain, Registrar

CONVENER

Dr. H. Siddhi Jailani, Dean, School of Mechanical Sciences
Dr. A.S. Selvakumar, HoD, Mechanical Engineering

COORDINATORS

Dr. M.A. Sai Balaji, Associate Professor
Dr. R. Karunanithi, Associate Professor

CO-COORDINATOR

Dr. Md. Javeed Ahammed, Assistant Professor (Sr. Gr)

DATES TO REMEMBER

Last date of Registration : 20.08.2024

VENUE

CSB Seminar Hall (Architecture Block), 6th Floor,
B.S. Abdur Rahman Crescent Institute of Science & Technology,
Vandalur, Chennai - 600 048.

CONTACT DETAILS

Dr. M.A. Sai Balaji & Dr. R. Karunanithi
Department of Mechanical Engineering,
B.S. Abdur Rahman Crescent Institute of Science & Technology,
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E-mail: workshopsacs@gmail.com, workshopas24@gmail.com

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One Day National Level Workshop on

TAMING THE DUST: MINIMIZING BRAKE PARTICULATE MATTER EMISSIONS

22nd August 2024

Full Name :

Qualification :

Designation :

Organization :

Address :

Mobile :

E-mail :

Registration Category

Academic Institution Industry

Details of Registration

Amount :

Online Transfer Reg. No. :

Date of Transfer :

DDD Details :

Food Preference

Veg. Non-Veg.

CERTIFICATE

Applicant's Signature

Dr./Mr/Ms. is working in the
department of Engineering in
our organization / institution and is sponsored to attend the program.

Place : Signature of the Sponsoring Authority

Date : (with seal)

Invitation of the Seminar

In the name of Allah, the most beneficent, the most merciful

SAEINDIA
SOUTHERN SECTION MWC DIVISION

Crescent
B.S. Abdur Rahman™
Institute of Science & Technology
Approved as an Affiliated Institute of Anna University, Chennai

B.S. Abdur Rahman Crescent Institute of Science & Technology
Department of Mechanical Engineering

One Day National Level Workshop
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**TAMING THE DUST: MINIMIZING BRAKE
PARTICULATE MATTER EMISSIONS**

22nd August, 2024

President of the Function
Prof. Dr. T. Murugesan,
Vice-Chancellor

Chief Guest
Mr. Prakash Anantharaman
Vice President (R & D)
Renault Nissan Technology & Business Center, Chennai, India.

Inauguration: 22nd August 2024 : 09.30 AM

Venue
CSB Seminar Hall, Architecture Block
B.S. Abdur Rahman Crescent Institute of Science & Technology

All are cordially invited

Conveners	Coordinators
Dr. H. Siddhi Jallani Prof. & Dean, SMS	Dr. M.A. Sai Balaji Asso. Prof., Mechanical Engg.
Dr. A.S. Selvakumar Prof. & Head, Mechanical Engg.	Dr. R. Karunanithi Asso. Prof., Mechanical Engg.

Co-Coordinator
Dr. Md. Javeed Ahamed
Asst. Prof. (Sr. Gr.), Mechanical Engg.

Inauguration Schedule:

09.45 - 09.47 AM	QIRATH by Dr. Asrar Ahmed
09.47 - 09.52 AM	Thamizh Thaaai Vazhthu
09.52 - 09.57 AM	Welcome Address by HOD / Mech
09.57 - 10.07 AM	Presidential Address by the honourable Vice Chancellor
10.07 -10.12 AM	Felicitation by DEAN (SMS)
10.12 – 10.17AM	VC to present Shawl & Memento to the Chief Guest – Mr. Prakash Anantha Raman (Vice President – R& D, RNTBC)
10.17 – 10.19 AM	Dean to present memento to SAESSMWCD Chairman – Dr. Baskara Sethupathy
10.19 – 10.21 AM	HOD / MECH to present memento to SAESSMWCD Secretary – Mr. Vijay Kumar DGM R&D, M&M
10.21 – 10.23 AM	Introduction about the Chief Guest – Dr. G. Rajesh
10.23 -10.43 AM	Chief Guest delivery address
10.43 - 10.46 AM	Vote of Thanks by the Coordinator – Dr. M. A. Sai Balaji
10.46 -10.50 AM	Group photograph

The seminar began with the recitation of Qirath. The Department Head, Dr. A.S.Selvakumar, warmly welcomed the attendees. Our esteemed Vice Chancellor, T.Murugesan, delivered the presidential address. Dr. H. Siddhi Jailani, Dean (SMS), offered his felicitations afterward. This was followed by the inaugural address by the Chief Guest, Mr. Prakash Anantha Raman (Vice President – R&D, RNTBC). One of the event coordinator, Dr.M.A.Sai Balaji, proposed the vote of thanks to the attendees.



Session I:

The speaker for the first session **Mr. Gopala Krishnan.V**, General Manager, Apache Friction R&D, Brakes India Ltd, Chennai presented the topic “**Brake Emissions-Evaluation & Control methods**”.

His lecture focused on:

- The evolution of the non-exhaust norms and the proposed test schedules to capture and measure the particulate matters.
- A discussion on different case studies carried out in his organization.



Session II:

Dr. Navnath Kalel, Assistant Manager (R&D), Friction Products Section, Suprajit Engineering Limited, Bangalore presented the topic “**Development of Cu free brake pads and Brake particulate matter emission**”

The emphasis of his lecture was on:

- The development of Cu free brake pads.
- How the Cu free pads aids in reducing the brake particulate matter emission



Session -III:

Mr.G.Vijay Sankar, Principal Engineer/Materials Technology, Mahindra Research Valley, Mahindar & Mahindra Ltd., presented the topic “***Taming the dust through the sustainable brake rotor development***”

The focus of his presentation was on:

- The development of sustainable brake rotor through FNC process
- The problems encountered from the friction couple if only the rotor is modified.
- How the variation of carbon content in the composition affects the mechanical properties of the rotor.



Session -IV:

Mr.Saravanakumar Subbu, Deputy General Manager,Chassis Engg-PF ASE RAE Division, Renault Nissan Technology Business India Ltd., presented the topic “**Brake Emissions and impacts on NVH Performance -an Overview**”

The **key points** of his presentation were

- The brief introduction about the Noise, Vibration and Harness in the brake system.
- The problems encountered by the friction couple due to modifications on the brake system and how it affects the transfer layer formation ultimately affecting the NVH issues.



Session -V:

Mr. Nirmalendu Chatterjee, Global Sales Leader for ITT Friction Technology, Pune presented the topic “**Global Trends of Automotive Market & Requirements of Particles engineering**”

The **Central themes** of his presentation were

- The growing concern about declining global sales of EVs
- The challenges posed to the friction material industry and OEMs by the upcoming Euro-7 particulate matter emission regulations

- A comparison of Europe's preparedness for PM emissions to that of our nation.

Feedback from the participants:

The feedback from participants was overwhelmingly positive. They expressed a desire for more events to be organized on topics of pressing concern.



The seminar was concluded with the vote of thanks by Dr. M.A.Sai Balaji– coordinator of the event.

Workshop participant details:

S.No	Name	Organization Name
1	Janakiraman R	UD Trucks India
2	Swaminathan H	Brakes India Ltd
3	Nirmal Jackson U	Brakes India Ltd
4	Gopala Krishnan.V	Brakes India Ltd
5	Mr.Vijay Kumar	Mahindra & Mahindra Ltd
6	Raja.R	Mahindra & Mahindra Ltd
7	JEEVAHARAN M	Mahindra & Mahindra Ltd
8	Mr.Vijaykumar	Mahindra & Mahindra Ltd
9	DHANAPAL M R	Mahindra & Mahindra Ltd
10	Nishanth Govindarajan	Ford Motor Company
11	Dr. Navnath Ramchandra Kalel	Suprajit Engineering Limited, Bangalore
12	Dr. Ashish Saurabh	Suprajit Engineering Ltd.
13	Balaji P	TVS Sundaram Brake Linings Ltd
14	Vinoth Rao E	TVS Sundaram Brake Linings Ltd
15	Vaidheeswaran	TVS Sundaram Brake Linings Ltd
16	B Venugopal	Steadfast Friction and Carbon Products
17	Arun kumar prasad	Tivolt , TI clean mobility
18	Atthi sudar N	Suprajit Technology Centre
19	Atthi Sudar N	Suprajit Technology center
20	Satya Priye	Satya Cashew Chemicals Pvt Ltd
21	Vengatesan	Renault Nissan technologies and business centre India p
22	Aparna Rajput	Renault Nissan Technology and Business Center, India.
23	Prasad s	Renault Nissan Technology and Business Center, India.
24	Murali Arumuttu	Renault Nissan Technology and Business Center, India.
25	Srinivasan	Renault Nissan Technology and Business Center, India.
26	P Arulanandam	ALGATS Engineering
27	Dharmaraja stephen	Karunya Institute of Technology and Sciences
28	R Reshin	Karunya Institute of Technology and Sciences
29	Mohandoss R	VIT Chennai
30	Muthamilselvi .P	SRM Institute of Science and Technology
31	Dr. V. Krithika	SRM Institute of Science and Technology
32	Debobrata Majumdar	Mando Automative India Pvt Ltd
33	NANDHAKUMAR G	Mando Automative India Pvt Ltd
34	S prasanth	Mando Automative India Pvt Ltd
35	Karthick Kasinathan	Mando Automative India Pvt Ltd
36	Hasanal Arzad H	Mando Automative India Pvt Ltd
37	MARIAMMAL.A	Mando Automative India Pvt Ltd
38	Vignesh kumar N M	Mando Automative India Pvt Ltd
39	Prasanta maji	Mando Automative India Pvt Ltd
40	NAGENDRAN P	Mando Automative India Pvt Ltd
41	MUTHU KRISHNAN. G	Mando Automative India Pvt Ltd
42	Subhadip Goswami	Mando Automative India Pvt Ltd

43	Saravanan C	Mando Automative India Pvt Ltd
44	Moloy Gorai	Mando Automative India Pvt Ltd
45	Krishnendu Mallick	Mando Automative India Pvt Ltd
46	Sagat Dutta	Mando Automative India Pvt Ltd
47	Rahman. A	B S A Crescent Institute of Science and Technology
48	LOGANATHAN SEKAR	B S A Crescent Institute of Science and Technology
49	P D Jeyakumar	B S A Crescent Institute of Science and Technology
50	Dr. C. K. ARVINDA PANDIAN	B S A Crescent Institute of Science and Technology
51	D. PRADEEP KUMAR	B S A Crescent Institute of Science and Technology
52	Dr.Pervaz Ahmed M	B S A Crescent Institute of Science and Technology
53	Dr.ASRAR AHMED	B S A Crescent Institute of Science and Technology
54	Dr.Sathickbasha	B S A Crescent Institute of Science and Technology