Dr. Md Oayes Midda

Assistant Professor

Department of Chemical Engineering

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Qualification	Institution	Subject	Year	Marks (CGPA/%)	Division
PhD	IIT Bombay	Chemical Engg	2017	7.27	First
M.Tech	IIT Roorkee	Chemical Engg	2011	8.95	First
B.Tech	University of Calcutta	Chemical Engg	2009	8.18	First
B.Sc	University of Calcutta	Chemistry (Hons)	2006	65.3	First
12 th	WBCHSE	Pure Science	2003	78.3	First
10 th	WBBSE	All	2001	76.3	First

RESEARCH AREA

Fluidized bed membrane bioreactor, wastewater treatment, membrane gas separation, polymeric composite membranes, multicomponent gas transport & modelling through membranes, facilitated gas transport, MOF nano-material synthesis, and packed bed adsorption.

TEACHING EXPERIENCE

Assistant professor in the Department of Chemical Engineering, MNIT Jaipur from 15th March, 2019 to till date.

Assistant professor in the Department of Chemical Engineering, Manipal University Jaipur from 10th July, 2017 to 14th March, 2019.

RESEARCH EXPERIENCE

Research associate at Indian Institute of Technology Bombay on the project "*Membrane based bio-gas separation*" under the supervision of Prof. Akkihebbal K Suresh (Dec – June, 2017).

RESEARCH PROJECTS

S. No.	Project Title	Sponsored Agency	Duration	Amount (Lacs)	Year
1	Integrated fluidized bed membrane bioreactor for wastewater treatment (PI)	Technical Education Quality Improvement Programme Phase – III (TEQIP-III)	1 year	4.00	Sep, 2019 – Sep 2020
2	Effective treatment of wastewater effluents by a fluidized bed membrane bioreactor with low membrane fouling (PI)	•	3 year	39.642	02/09/2020 to 02/03/2024

PHD PROJECTS GUIDED

S.	Name of student	Topic	Role	Status
No.				
1	Ravi Kumar Parihar (2019RCH9164)	Anaerobic fluidized bed membrane bioreactor for wastewater treatment and fouling mitigation	Supervisor	Thesis Submitted (July 2024)
2	Pappu Kumar Burnwal (2018RCH9035)	Synthesis and characterization of membrane for ethanol water separation using vacuum membrane distillation	Joint- Supervisor	Completed (11.12.2023)

PG PROJECTS GUIDED

S.No.	Project Title	Name of students	Year of Submission
1	Kinetic study of anaerobic biodegradation of dye wastewater	Priydarshni Porwal	June, 2023

UG PROJECTS GUIDED

S.No.	Project Title	Name of students	Year of Submission
1	Fabrication of zeolitic imidazolate frameworks incorporated poly(vinylidene fluoride) membranes	Stuti Soni, Laxmi Baghel, Vikas Dhanka	Ongoing
2	Study the performance of composite polymeric membranes in dye removal	Priyal Maheshwari, Siddhi Pal, Deepak Kaushik	Ongoing
3	Hydrodynamic modeling of membrane bioreactor	Prajjwal Somani, Deepak Mohta, Agarwal Manthan Khemchand	May, 2024
4	Water pinch analysis: case study of a plant	Priya Bajaj, Aishwarya Roy, and Monika	May, 2024
5	Anaerobic fluidized bed membrane bioreactor: fouling model and validation	Jhanvi Sharma, Palak Agrawal, Sunidhi Dugawa	May, 2023
6	Simulation of two-stage membrane bioreactor using Aspen Plus	Gourav Kargwal, Sejal Gupta, Piyush Mishra	May, 2023
7	Heat exchanger network synthesis and Energy integration of a plant	Mukund Biyani, Virender, Akash Singhal, Deendayal Meena	June, 2022
8	Design of water-Gas shift reactor unit to convert CO to CO2 using Dwsim simulator	Ankit Ojha, Dharmendra Kumar, Vikky Devanda	May, 2021
9	Synthesis and characterization of polymeric composite membrane for separation applications	Devesh Agarwal, Shivam Dubey, Utsav Goyal	May, 2020

JOURNAL PUBLICATIONS

S. No	Authors	Title	Journal	Vol.	Year	Page No.
1	Ravi Kumar Parihar, Pappu Kumar Burnwal, S. P. Chaurasia and Md Oayes Midda*	Unveiling the evolution of anaerobic membrane bioreactors: applications, fouling issues, and future perspective in wastewater treatment	Reviews in Environmental Science and Bio/Technology		2024	Publishe d online 29 th Oct, 2024

2	Ravi Kumar Parihar, Kriti Bhandari, Pappu Kumar Burnwal, Soumyadip Ghosh, S. P. Chaurasia and Md Oayes Midda*	Advancing dairy wastewater treatment: Exploring two-stage fluidized bed anaerobic membrane bioreactor for enhanced performance, fouling, and microbial community analysis Journal of Water Process Engineering		58	2024	104917, 1-12
3	Ravi Kumar Parihar, Soumyadip Ghosh, S. P. Chaurasia and Md Oayes Midda*	Anaerobic Treatment of Dairy Wastewater: Impact of Substrate-to- Inoculum Ratio on Biomethane Production	Journal of Environmental Engineering	150 (1)	2023	0402309 0, 1-12
4	Pappu Kumar Burnwal, <u>Md</u> Oayes Midda, and S. P. Chaurasia	Synthesis of novel PVDF-co-PTFE membranes for ethanol—water separation using vacuum membrane distillation	Chemical Engineering Communication s		2023	1-21
5	Ravi Kumar Parihar, S. P. Chaurasia and Md Oayes Midda*	An overview of anaerobic membrane bioreactors' evolving research statistics for treating wastewater	Materials Today: Proceedings	In press	2023	
6	Pappu Kumar Burnwal, Priya Pal, Md Oayes Midda, and S. P. Chaurasia	Synthesis of Hybrid PVDF–PTFE Membrane Using Nonhazardous Solvent for Ethanol–Water Separation through Membrane Distillation	Journal of Hazardous, Toxic, and Radioactive Waste	26	2022	0402202 4, 1-11
7	Md Oayes Midda, Vimal Chandra Srivastava and J P Kushwaha	Modelling single and binary adsorptive behaviour of aniline and nitrobenzene onto granular activated carbon	Physics and Chemistry of Liquids	58	2020	150-163
8	Md Oayes Midda, Vimal Chandra Srivastava and J P Kushwaha	Optimizing experimental binary adsorption of aniline–nitrobenzene onto granular activated carbon packed bed by Taguchi's methodology	Journal of Water Process Engineering	34	2020	101045
9	Yogendra Singh Solanki, Madhu Agarwal, Sanjeev Gupta, Pushkar Shukla, Karishma Maheshwari, <u>Md</u> <u>Oayes Midda</u>	Application of synthesized Fe/Al/Ca based adsorbent for defluoridation of drinking Water and its significant parameters optimization using response surface methodology	Journal of Environmental Chemical Engineering	7	2019	103465
10	Md Oayes Midda and A. K. Suresh	Some mechanistic insights into the action of facilitating agents on gas permeation through glassy polymeric membranes	AIChE	64	2018	187-199

CONFERENCES PUBLICATIONS

S. No	Conference name	Place	Conference period	Title of paper presented	Author(s)
1	9th International Conference on Environment and Renewable Energy (ICERE-23)	Hanoi, Vietnam	February 24 – 26, 2023	Performance evaluation of a fluidized bed membrane bioreactor for anaerobic treatment of dairy effluent	Ravi Kumar Parihar, Soumyadip Ghosh, S. P. Chaurasia and Md Oayes Midda
2	2nd International Conference on Water Technologies (ICWT - 2022)	IIT Bombay (online)	Dec 1 – 2, 2022	Performance and fouling control of tiered fluidized bed membrane bioreactor for anaerobic treatment of dairy wastewater	Ravi Kumar Parihar, Soumyadip Ghosh, S. P. Chaurasia and Md Oayes Midda
3	International conference on Advances in Smart Materials, Chemical and Biochemical Engineering (CHEMSMART-22)	NIT Rourkela (online)	Dec 16 – 18, 2022	An overview of anaerobic membrane bioreactors' evolving research statistics for treating wastewater	Ravi Kumar Parihar, S. P. Chaurasia and <u>Md</u> <u>Oayes Midda</u>
4	International conference on Chemical	IIT Roorkee	Sept 8 – 10, 2022	Dairy wastewater treatment using a two-stage anaerobic membrane	Ravi Kumar Parihar, Soumyadip Ghosh, S.

	Engineering: Enabling Transition Towards Sustainable Future			bioreactor (AnMBR): fouling analysis	P. Chaurasia and Md Oayes Midda
5	International conference on Water Desalination, Treatment & Management (InDACON 2021)	MNIT Jaipur (online)	March 19 – 20, 2021	Recent trends and research directions in Anaerobic membrane bioreactor for wastewater treatment with future perspective	Ravi Kumar Parihar, Pappu Kumar Burnwal, S.P.Chaurasia, Md Oayes Midda
6	International conference on Water Desalination, Treatment & Management (InDACON 2021)	MNIT Jaipur (online)	March 19 – 20, 2021	Recent advancements, preparation and characterization of synthesized composite PVDF-PTFE membrane and its application in ethanol separation using VMD	Pappu Kumar Burnwal, Md Oayes Midda, Ravi Kumar Parihar, S.P.Chaurasia
7	International Conference on Recent Innovations in Cleaner Technologies	MNIT Jaipur (online)	March 8 – 9, 2021	Synthesis and characterization of PVDF-PTFE hybrid membrane using DMSO as non-hazardous solvent	Pappu Kumar Burnwal, S.P.Chaurasia, Md Oayes Midda, Ravi Kumar Parihar
8	CHEMCON-2020	by IIChE Headquarters & Hyderabad regional centre (online)	Dec 27-29, 2020	Analysis for permeation of binary aqueous mixture of ethanol/water through synthesized PVDF-PTFE composite membrane using vacuum membrane distillation	Pappu Kumar Burnwal, S.P.Chaurasia, Md Oayes Midda, Ravi Kumar Parihar
9	CHEMCON-2018	NIT Jalandhar	Dec 27-30, 2018	Design aspects and modelling of two- stage fluidized bed membrane bioreactor and recent trends in wastewater treatment	Md Oayes Midda
10	22nd International Congress of Chemical and Process Engineering (CHISA 2016)	Prague, Czech Republic	Aug 27-31, 2016	Pure and mixed gas transport of permanent gas mixture through polysulfone membrane	Md Oayes Midda, S.S.K. Jampa and A.K. Suresh
11	Membrane Conference of Visegrad Countries (PERMEA 2016)	Prague, Czech Republic	May 16-19, 2016	Comparison study between rubbery and glassy polymers for relation between pure and mixed gas permeation	S.S.K. Jampa, Md Oayes Midda, A.K. Suresh and Huanting Wang
12	Research Scholars' Symposium	IIT Bombay	21 st Feb, 2015	Polyfurfuryl Alcohol: A Sustainable polymer for gas-separation	Md Oayes Midda and A.K. Suresh
13	Research Scholars' Symposium	IIT Bombay	15 th Feb, 2014	Preparation of thin polyfurfuryl alcohol layer by in-situ acid catalyzed polymerization on asymmetric polysulfone membrane and O ₂ /N ₂ gas mixture separation study	Md Oayes Midda and A.K. Suresh
14	2 nd International conference on Advances in Chemical Engineering	IIT Roorkee	22–24 Feb, 2013	Carbon molecular sieve membranes and mixed matrix membranes for permanent gas separation-a review	Md Oayes Midda and A.K. Suresh

CONFERENCE/WORKSHOP/SEMINAR ORGANIZED

Conference/workshop/STC/Seminar details	Organized by	Organized Date	Responsibility
Online STC on "Process Simulators for Chemical	Dept. of Chemical	06-10 th March	Convener
Engineering Applications (DWSIM and Aspen Plus)"	Engg., MNIT Jaipur	2024	
Online STC on "Process Simulators for Chemical	Dept. of Chemical	$13^{th} - 17^{th}$	Convener
Engineering Applications"	Engg., MNIT Jaipur	January, 2022	
Online STC on "Basic Principles of DFT Calculations &	Dept. of Chemical	$23^{\rm rd}-27^{\rm th}$	Convener
Molecular Dynamics Simulations"	Engg., MNIT Jaipur	November, 2020	
Online STC on "Analysis and Interpretation of Data	Dept. of Chemical	$26^{th} - 30^{th}$	Coordinator
resulted from Materials Characterizations"	Engg., MNIT Jaipur	October, 2020	Coordinator
Online STC on "Process Simulators for Chemical	Dept. of Chemical	$25^{th}-29^{th}$	Convener
Engineering Applications"	Engg., MNIT Jaipur	September, 2020	

International Conference on "Advances in Systems, Control and Computing (AISCC-2020)"	Dept. of Chemical Engg. & Electrical Engg., MNIT Jaipur	27 th – 28 th Feb, 2020	Coordinator
A Five Days short term course on Fuel Cell: Fundamentals and Applications	Dept. of Chemical Engg., MNIT Jaipur	27 th – 31 st Jan, 2020	Coordinator
A seminar on "Systematizing Solvent Recovery in chemical industries by applying Process Systems Engineering (PSE) principles" by Dr. Kirti M. Yenkie (Rowan University, New Jersey, US)	Dept. of Chemical Engg., MNIT Jaipur	7 th January, 2020	Coordinator
Dhirubhai Ambani Commemoration Day Celebration & International Conference on Energy & Environment: Challenges and Opportunities for Industries	Dept. of Chemical Engg., MNIT Jaipur	28 th – 29 th Dec, 2019	Joint Secretary
A five-day workshop on CFD using OpenFOAM	Dept. of Chemical Engg., MNIT Jaipur	10 th – 14 th Aug, 2019	Coordinator

TECHNICAL SKILLS

Analytical Instruments

Gas Chromatography-TCD, BET instrument (ASAP 2020, Micromeritics), TG-DSC instrument (NETZSCH), FTIR Spectroscopy, UV-Spectroscopy, COD and BOD analyzer: operation and data analysis.

Software

MATLAB and C (programming software), Aspen-HYSYS and DWSIM (simulation software), HINT (energy integration software), Origin Pro 8, MS office, Visio, ImageJ.

ADMINISTRATIVE RESPONSIBILITY

- First-Year Coordinator of the institute, MNIT Jaipur (16.07.2024 till date).
- Ex-officio member of the Examination Cell of the Institute for Institute examination AY 2024 25.
- Accreditation Coordinator of the institute, MNIT Jaipur (17.07.2022 16.07.2024).
- Secretary of Departmental Faculty Board, MNIT Jaipur (30.06.2022 till date).
- Coordinator of Student mentorship programme (SMP) under the Creative Arts & Cultural Society (CACS), MNIT Jaipur (22.03.2021 June, 2023).
- Member of First Year Academics Committee for the department of Chemical Engineering (MNIT Jaipur) to compile NBA accreditation parameters (Sep, 2020 till date)
- Member of the Institute Convocation Brochure making team, MNIT Jaipur (from Dec, 2019- till date).
- Faculty coordinator of Chemical Engineering Student Society (ChESS) at the department of Chemical Engg., MNIT Jaipur (Oct, 2019 July, 2023).
- Member of NBA accreditation at the department of Chemical Engg., MNIT Jaipur (June, 2019 Till date).
- Faculty Advisor of 2nd year Chemical Engg. Students (2020, 2021, 2022).
- Faculty In-charge of Industrial Pollution Abatement lab.
- Coordinator of NAAC accreditation at the department of Chemical Engg., Manipal University Jaipur (Aug, 2017 Dec, 2018).
- Coordinator for outcome-based education (OBE) to maintain & prepare documents for NBA accreditation (Jan, 2018 Feb, 2019).
- Webpage coordinator for maintaining departmental website (Jan, 2018 Feb, 2019).

PROFESSIONAL MEMBERSHIP

- Life member of Indian Desalination Association (InDA) from 2019.
- Life associate member of Indian Institute of Chemical Engineers (IIChE) from 2018

AWARDS/SCHOLARSHIPS

- Received "Best Presentation Award" at the 9th International Conference on Environment and Renewable Energy (ICERE-23), held at Hanoi, Vietnam during February 24-26, 2023.
- Received "Best Oral Presentation" award at Research Scholars' Symposium organized by IIT Bombay (February, 2015).
- Received PhD scholarship from a combined project funded by Department of Science & Technology (DST) and Australia India Strategic Research Fund (AISRF).
- Secured an All-India rank of 288 in Graduate Aptitude Test in Engineering with 92.97 percentile marks (GATE-2009).
- Received merit certificate award from "Science Talent Search Examination", West Bengal Board (February, 2002).

INDUSTRIAL EXPOSURE

(Haldia Petrochemicals Limited, Haldia, West Bengal, May – June, 2008)

Mainly visited the production unit of polypropylene (PP) plant and learned briefly about all the processes taking place in the aforementioned sections. Also visited naphtha cracker unit and high-density polyethylene unit as project intern.

SUBJECTS TAUGHT

Sl. No.	Subject	Core/ Elective	Semester	Year		
Theory Courses						
1	Fuel Cell (CHT419)	Open Elective	VII (B.Tech)	July to Dec, 2024		
2	Computer Aided Numerical Methods (22CHT202)	Core	III (B.Tech)	July to Dec, 2023		
3	Numerical Methods in Chemical Engineering (CHT211)	Core	III (B.Tech)	July to Dec, 2019, 2020, 2021, 2022		
4	Process Modifications for Green Technology and Energy Integration (CHT418)	Elective	VIII (B.Tech)	Jan to May, 2021, 2022, 2023, 2024		
5	Optimization of Chemical Processes (CHT610)	Elective	II (M.Tech)	Jan to May, 2020		
6	Operations Research (CHT409)	Elective	VII (B.Tech)	July to Dec, 2019		
7	Environmental Systems Engineering	Elective	VI (B.Tech)	Jan to May, 2018		
8	Energy and Process Integration	Elective	VII (B.Tech)	July to Dec, 2017		
9	Chemical Process Industries	Core	VII (B.Tech)	July to Dec, 2017		
Labo	ratory Courses					
1	Computer Aided Numerical Methods Tutorial (22CHT202)	Core	III (B.Tech)	July to Dec, 2024		
2	Process Instrumentation and Control Lab (22CHP307)	Core	V (B.Tech)	July to Dec, 2024		
3	NMChE Lab (CHP215)	Core	III (B.Tech)	July to Dec, 2019, 2020, 2021, 2022		
4	Industrial Pollution Abatement Lab (CHP216)	Core	VI (B.Tech)	Jan to May, 2020		
5	Process Dynamics and Control Lab (CHP316)	Core	VI (B.Tech)	Jan to May, 2020		
6	Heat Transfer Laboratory	Core	VI (B.Tech)	Jan to May, 2018		
7	Numerical Methods Laboratory	Core	IV (B.Tech)	Jan to May, 2018		
8	Fluid mechanics laboratory	Core	V (B.Tech)	July to Dec, 2017		

EXTRACURRICULAR ACTIVITY & ACHIEVEMENTS

- Chaired a Session at the International Conference on "Recent Advances in Modeling and Simulation Techniques in Engineering and Sciences [RAMSTES-2021]", organized by Manipal University Jaipur, India (December 8-10, 2021).
- Judged a Session at "The outstanding young chemical engineer blast carboblocks awards 2021" for undergraduate category, organized by IIChE Students Chapter of Datta Meghe College of Engineering, Mumbai, India (September 02-03, 2021).
- Chaired a Session at the International Conference on "Biotechnology for Sustainable Agriculture, Environment and Health", jointly organized by Malaviya National Institute of Technology, Jaipur and The Biotech Research Society, India at Jaipur, India (April 04-08, 2021).
- Chaired a session at the International conference on "Water Desalination, Treatment & Management (InDACON 2021)" organized by Indian Desalination Association and MNIT Jaipur (March 19–20, 2021).
- Chaired a Session in the International Conference on "Advances in Systems, Control and Computing (AISCC-2020)", jointly organized by Department of Chemical Engineering and Electrical Engineering, MNIT Jaipur at Jaipur (Feb 27-28, 2020)
- Attended a FDP on "Introduction to Process Modeling in the Membrane Separation Process taught by Prof. Sirshendu De (IIT Kharagpur)" organized by NPTEL-AICTE (24/02/2020 to 20/03/2020, 4 weeks).
- Attended a FDP on "Computer Aided Single Objective Optimization taught by Prof. Prakash Kotecha (IIT Guwahati)" organized by NPTEL-AICTE (27/01/2020 to 20/03/2020, 8 weeks).
- Attended an online training on "Digital transformation in teaching learning process taught by Dr. Sameer Sahasrabudhe (IIT Bombay)" organized by NPIU & TEQIP-III and funded by the Ministry of HRD, GoI (06/04/2020 to 22/04/2020, 2 weeks).
- Attended a faculty development programme (FDP) on "Curriculum Implementation (Outcome based education & curriculum development)" organized by Curriculum Development Centre Department (NITTR Chandigarh) at MNIT Jaipur (October 14-18, 2019).
- Attended a workshop on "Orientation program on Minitab 19 (Statistical software for research & analysis)" organized by Dept. of Chemical Engg., MNIT Jaipur and conducted by Qsutra Academy for Excellence (July 16, 2019).
- Attended a faculty development programme (FDP) on "Effective Teaching" organized by Dept. of Management Studies & Electrical Engg, MNIT Jaipur (March 27-28, 2019).
- Attended a faculty development programme (FDP) on "Pedagogic & Personal Effectiveness" organized by Manipal University Jaipur (Aug 30 Sep 1, 2017).
- Designed the web page of "Chemference 2012" and participated as a student coordinator at IIT Bombay (Dec 10-11, 2012).
- Actively participated in Technical Fest (TechConnect-2013) at IIT Bombay (Jan 3-5, 2013).
- Participated in a training programme on "Advanced Analytical Techniques" organized by Continuing Education & Quality Improvement Programmes, IIT Bombay (March 26-29, 2012).
- Attended a training programme on "Cleaner Technology" at IIT Roorkee sponsored by Central Pollution Control Board (CPCB), Delhi. (Feb 23-25, 2011).
- Attended "CHEMCON" as an organising committee member at University College of Science and Technology, Kolkata (Dec 27-30, 2007).

PARTICIPATION IN SWAYAM/NPTEL, STC, STTP COURSES

S.	Name of the Course	Name of Host	Host	Online	Date(s)
No.		Faculty	Institute	platform	
1	Introduction to Process Modeling in the Membrane Separation Process	Prof. Sirshendu De	IIT Kharagpur	SWAYAM / NPTEL	24/02/2020 to 20/03/2020 [4 weeks]
2	Computer Aided Single Objective Optimization	Prof. Prakash Kotecha	IIT Guwahati	SWAYAM / NPTEL	27/01/2020 to 20/03/2020 [8 weeks]
3	Digital transformation in teaching learning process	Dr. Sameer Sahasrabudhe	IIT Bombay	SWAYAM / NPTEL	06/04/2020 to 22/04/2020 [2 weeks]
4	Data Analytics and Fundamentals of Machine learning (ML) for Process Modelling	Dr. Angan Sengupta, Dr. Abhilasha Maheswari	IIT Jodhpur	STTP	06/10/2022 to 08/10/2022 [3 days]
5	Introductory AI/ML with Python	Prof. P. Balamurugan	IIT Bombay	STC	29/04/2023 to 03/06/2023 [5 weeks]

SPORTS

- Inter-NIT chess competition, MNIT Jaipur stands second position (Dec, 2019).
- Chess champion in the faculty sports competition, Manipal University Jaipur (Dec, 2017).
- Participated in Inter department Chess competition (PG sports, IIT Bombay, 2015).
- Participated in Institute Chess openings (IIT Bombay, 2015).
- Participated in Inter department Badminton competition (PG sports, IIT Bombay, 2014).
- Participated in Intra-hostel Football competition (IIT Roorkee, 2011).
- Participated in Annual Sports Inter-Departmental Cricket Competition (Calcutta University, 2009).
- Participated in Annual Sports Inter-Departmental Football Competition (Calcutta University, 2008).

REFERENCES

- Prof. Akkihebbal K Suresh, Emeritus Fellow Professor, Department of Chemical Engineering, Indian Institute of Technology Bombay, Mumbai 400076. Email: aksuresh@iitb.ac.in, Tel: +91-22-25767240., Mo: 9833117240.
- Prof. Vimal Chandra Srivastava, Professor, Department of Chemical Engineering, Indian Institute of Technology Roorkee, Roorkee - 247667. Email: vimalfch@iitr.ac.in, Tel: +91-1332-285889, Mo: 9410372170.
- Prof. Jayesh Bellare, Department of Chemical Engineering, Indian Institute of Technology Bombay, Mumbai 400076. Email: jb@iitb.ac.in, Tel: +91-22-25767207.

(Md Oayes Midda) 12.11.2024