

BIO-DATA



1. **Name** : Dr. Roshan Lal Virdi
2. **Designation** : Professor
3. **Department** : Mechanical Engineering
4. **Date of Birth** : Feb-1979
5. **Address for Correspondence** : Department of Mechanical Engineering, Punjabi University, Patiala 147 002

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- 6 **Areas of Specialization** : Minimum Quantity Lubrication, Grinding, Nanofluids

7. Academic Qualifications:

Sr. No.	Degree	Year	Board/Univ /	College	Division	Subjects Taken
1	Ph.D	2021	PUNJABI UNIVERSITY	UCoE	--	Minimum Quantity Lubrication
2	M.E.	2005	PANJAB UNIVERSITY	P.E.C.	First	ROTODYNAMICS
3.	B.Tech	2002	PTU	GNDEC Ludhiana	First	Mechanical

8. Membership of Professional Bodies/Organizations

1. SOMME

Courses Attended:

S.No.	Year	Duration	Title of Course	Organisong Institute	Orientation/Refresher/STTP
1	25/12/2006	ONE WEEK	RENEWABLE ENERGY BASED TECHNOLOGIES	GNDEC LUDHIANA	STTP
2	21/07/2008	ONE WEEK	MODELING AND SIMULATION USING MATLAB	NITTTR CHANDIGARH	STTP
3	27/12/2010	ONE WEEK	Welding:Roadmap of Excellence	NIT Jalandhar	STTP
4	28/11/2011	ONE WEEK	Web Hacking and Security	NITTTR CHANDIGARH	STTP
5	19/05/2010	FOUR WEEK	GOC	ASC PANJAB UNIVERSITY CHANDIGARH	ORIENTATION
6	05-10-11	THREE WEEK	INFORMATION TECHNOLOGY	ASC PANJAB UNIVERSITY	REFRESHER

				CHANDIGARH	
7	14/5/2012	THREE WEEK	MECHANICAL ENGINEERING	ASC PUNJABI UNIVERSITY PATIALA	REFRESHER
8	18-12-13	ONE WEEK	IC Engines Fuels	NIT Jalandhar	STTP
9	12-05-14	THREE WEEK	PROFESSIONAL STUDIES	ASC PUNJABI UNIVERSITY PATIALA	REFRESHER
10	25-05-15	ONE WEEK	METROLOGY LABORATORY PRACTICES	NITTTR CHANDIGARH	STTP
11	16-05-16	ONE WEEK	NANOTECHNOLOGY: Developments & Challenges	NITTTR CHANDIGARH	STTP
12	28-11-16	ONE WEEK	CAD/ACM	NITTTR Kolkata	STTP
13	24-11-17	ONE WEEK	Research Methodology	ASC PUNJABI UNIVERSITY PATIALA	STTP
14	11-12-17	ONE WEEK	3D Animation	NITTTR Bhopal	STTP
15	26-11-18	ONE WEEK	Student Psychology	NITTTR Chennai	STTP
16	19-03-19	ONE DAY	Sustainable Manufacturing	IIT ROPAR	WORKSHOP
17	29-09-19	ONE DAY	DM	AICTE	WORKSHOP
18	25-11-19	ONE WEEK	Theory of Plasticity and its Applications	IIT Bombay	STTP

9. Medals/Awards/Honours/Received

i)

10. Scholarships:

i) NIL

11. Details of Experience:

S. No.	Name of the	Position Held	Duration	Major Job Responsibilities and Nature of Experience
1.	Punjabi University Patiala	PROFESSOR	06/2023 – Till Date	Teaching and Research
2.	Punjabi University Patiala	ASSOCIATE PROFESSOR	06/2019 – 06/2023	Teaching and Research
3.	Punjabi University Patiala	ASSISTANT PROFESSOR	08/2008 – 06/2019	Teaching and Research
4.	MIMIT, Malout (Govt. of Punjab)	Assistant Prof.(Lecturer)	06/2006-08/2008	Teaching and Research
5.	INDO GLOBAL	Lecturer	08/2005-06/2006	Teaching and Research

12. Published Work (Please specify numbers only) :

- a. Research Papers
- i) National = 03
 - ii) International = 18.
 - iii) Conference/Seminar Presentation = 22
 - iv) Book Chapters =2
 - v) Books=2

13. R & D Projects**14. Invited Talks : 00****15. Ph.D. Students**

Guided : One
Under guidance : Two

16. M.Phil./M.TECH Students Guided: 25**17. List of Papers/Courses taught at P.G. and U.G. Level**

S. No.	Paper	Class
1.	CAD&M	M.Tech.
2.	PDD	M.Tech.
3.	SOM	B.Tech.
4.	MV	B.Tech.
5.	Machine Design	B.Tech.
6.	Fluid Machinery	B.Tech.
7.	Engg. Drawing	B.Tech.
8.	Machine Drawing	B.Tech.
9.	Operations Research	B.Tech.

10.	Operations Research	M.Tech.
11.	Fluid MECHANICS	B.Tech.

18. Technical Proficiency

1. AutoCAD, MATLAB, Solid Works

19. List of Papers Published

(A) Books One

(B) Research Papers Published:

Journals:

S.No	Year of Publication	Author	Title of Paper	Journal Detail	International or National	Remarks
1	2010	Khushdeep Goyal, R L Viridi, Jatinder Madan	Concept and Guidelines of Design for Manufacturability: A Shift from Traditional Design Concept	<i>Indian Journal of Engineering, Science and Technology,ISS N: 0973-6255</i>	Indian	Vol 4(1), pp 86-89
2	2011	Khushdeep Goyal, Roshan Lal Viridi	FINDING REACHABLE WORKSPACE OF A ROBOTIC MANIPULATOR BY EDGE DETECTION ALGORITHM		Indian	UGC
3	2012	Roshan Lal Viridi	ANALYSIS FOR THE MANUFACTURABILITY OF MECHANICAL PARTS AND ITS FUNCTIONALITY	ASIAN JOURNAL OF ENGINEERING AND APPLIED TECHNOLOGY. ISSN 2249-068X	Indian	UGC
4	2014	Amandeep Singh ,Roshan Lal Viridi ,Khushdeep Goyal	To Study the Slurry Erosion Behaviour of Hard Faced Alloy SS304	Manufacturing Science and Technology 2(6): 111-115, 2014	International	UGC
5	2015	Gurloleen Singh, Roshan Lal Viridi, Khushdeep Goyal	Experimental Investigation of Slurry Erosion Behaviour of Hard Faced AISI 316L Stainless Steel	Universal Journal of Mechanical Engineering 3(2): 52-56, 2015	International	Scopus
6	2016	ROSHAN LAL VIRIDI	MICROSTRUCTURAL EVOLUTION USING FRICTION STIR PROCESSING: REVIEW	Journal of Emerging Trends in Engineering, Science and Technology,	Vol 4, No. 1, 2016 International	ISSN 2394-5354,
7	2016	Roshan Lal Viridi ,Sukhpal Singh Chatha ,Hazoor Singh	Potential of Nanofluids as Cutting Fluids - An evolution	ASIAN REVIEW OF MECHANICAL ENGINEERING . ISSN 2249-6289 Vol 5 No.1	Vol 5, No. 1, 2016 International	ISSN 2249-6289

8	2017	Roshan Lal Virdi	Experimental Investigation of Wear Rate and Microstructural properties of 5754 Aluminium Alloy by Friction Stir Processing (November 2017)	International Journal of Latest Trends in Engineering and Technology (UGC List)	e-ISSN:2278-621X	UGC
9	2018	Roshan Lal Virdi	EFFECT OF DIFFERENT PARAMETERS ON CUTTING FORCES AND TEMPERATURE DURING GRINDING PROCESS USING MINIMUM QUANTITY LUBRICATION (July -2018)	Journal of Emerging Technologies and Innovative Research (Serial No. 63975)	ISSN: 2349-5162	UGC
10	2018	Roshan Lal Virdi	OPTIMIZATION OF PROCESS PARAMETERS DURING GRINDING AISI-4130 STEEL USING MINIMUM QUANTITY LUBRICATION (August-2018)	Journal of Emerging Technologies and Innovative Research	ISSN: 2349-5162	UGC
11	2019	Roshan Lal Virdi	EXPERIMENTAL INVESTIGATION OF SURFACE ROUGHNESS FOR MINIMUM QUANTITY LUBRICATION GRINDING UNDER SOYABEAN, RICEBRAN AND CANOLA OIL (January 2019)	Journal of Emerging Technologies and Innovative Research	ISSN: 2349-5162	UGC
12	2018	Roshan Lal Virdi	Environment Friendly Minimum Quantity Lubrication Technique (November 2018)	Journal of Emerging Technologies and Innovative Research	(ISSN: 2249-068X)	UGC
13	2019	Roshan Lal Virdi ,Sukhpal Singh Chatha ,Hazoor Singh	Performance Evaluation of Inconel 718 under vegetable oils based nanofluids using Minimum Quantity Lubrication Grinding	Material Research Express	International	SCI
14	2020	Roshan Lal Virdi ,Sukhpal Singh Chatha ,Hazoor Singh	Experiment evaluation of grinding properties under Al ₂ O ₃ nanofluids in minimum quantity lubrication	Materials Today	International	Scopus
15.	2020	Roshan Lal Virdi ,Sukhpal	Processing Characteristics of	Advances in Materials ansd	International	eSCI

		Singh Chatha ,Hazoor Singh	Different Vegetable Oil-based Nanofluid MQL for Grinding of Ni-Cr Alloy	Processing Technologies (2020)		
16.	2020	Roshan Lal Virdi ,Sukhpal Singh Chatha ,Hazoor Singh	Experimental investigations on the tribological and lubrication behaviour of Minimum Quantity Lubrication technique in grinding of Inconel 718 alloy	Tribology International (2020)	International	SCI
17.	2020	Roshan Lal Virdi ,Sukhpal Singh Chatha ,Hazoor Singh	Machining performance of Inconel-718 alloy under the influence of Nanoparticles based Minimum Quantity Lubrication Grinding	Journal of Manufacturing Processes (2020)	International	SCI
18.	2021	Roshan Lal Virdi ,Sukhpal Singh Chatha ,Hazoor Singh	Performance evaluation of Nanofluid based Minimum Quantity Lubrication Grinding of Ni-Cr(Inconel-718) alloy under the influence of CuO Nanoparticles	Advances in Manufacturing	International	SCI
19.	2022	Roshan Lal Virdi ,Parvinkal Singh,Pardeep Kumar	Investigation of solid particle erosion behaviour of SS-304 under different conditions	Materials Today	International	Scopus
20.	2022	Roshan Lal Virdi ,Rakesh Bhatia, Hazoor Singh,Sandeep Kumar	Microstructural and mechanical properties of CNT-reinforced ZrO ₂ -Y ₂ O ₃ coated boiler tube steel T-91	Journal of Electrochemical Science and Engineering (2022)	International	Scopus
21.	2022	Roshan Lal Virdi ,Parvinkal Singh,Pardeep Kumar	Burnishing with Grinding Wheel Shaped Alloy Tool and its Effect on Surface Integrity and Erosion Behavior of WC-10Co-4CrHVOF Coating	Journal of Thermal Spray Technology	International	SCI
22.	2023	Roshan Lal Virdi , Amritpal, Sukhpal Singh	A review on Minimum Quantity Lubrication technique application	Journal of the Brazilian Society of Mechanical	International	SCI

		Chatha ,Hazoor Singh	and challenges in grinding process using environment friendly nanofluids	Sciences and Engineering		
23.	2022	Roshan Lal Virdi ,Parvinkal Singh,Pardeep Kumar	Effect of In-process Cryogenic Cooling in the Burnishing Process on the Solid Particle Erosion Behaviour of HVOF Cermet Coating	Journal of Thermal Spray Technology	International	SCI

Conferences:

S.N o.	Year of Publication	Author	Title of Paper	Journal Detail	International or National	Remarks
CONFERENCES						
1	2008	Parlad Kumar, Roshan Lal Virdi, Ashish Mallik	Experimental Performance Analysis of an Engine using Traditional Diesel and Biodiesel from Palm Oil and Waste Cooking Oil	International Conference on Recent Developments in Mechanical Engineering 23-25Jan 2008 held at SUSCET Tangori	International	Proceedings
2	2009	Khushdeep Goyal, Roshan Lal Virdi	Computer Aided Production Engineering-A Subsystem of CIM	National Conference on INNOVATIVE DEVELOPMENTS IN ENGINEERING APPLICATIONS (26-27MARCH2009)	National	Proceedings
3	2010	Roshan Lal Virdi, Jatinder Madan, Khushdeep Goyal	Concepts and guidelines of design for manufacturability: A shift from traditional design.	National Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (19-20Feb 2010)	National	Proceedings
4	2011	Khushdeep Goyal, Roshan Lal Virdi, Deepak Pandey, Gurdarshan Singh	Electro Discharge Machining: A Review	National Conference on Advanced Manufacturing Technologies, CIET, Rajpura, January, 2011	National	Proceedings
5	2011	Khushdeep Goyal, Roshan Lal Virdi, Sandeep	ENHANCING THE USE OF COMPUTERS FROM CAD/CAM TO ACTUAL	Chitkara University, Rajpura	International	Proceedings

		Kumar , Chamkaur Jindal	MANUFACTURING ENVIRONMENT IN A MECHANICAL INDUSTRY			
6	2011	Khushdeep Goyal, Roshan Lal Viridi	FINDING REACHABLE WORKSPACE OF A ROBOTIC MANIPULATOR BY EDGE DETECTION ALGORITHM	National Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (7-8 October2011)	National	Proceedi ngs
7	2012	Roshan Lal Viridi	ANALYSIS FOR THE MANUFACTURA BILITY OF MECHANICAL PARTS AND ITS FUNCTIONALITY	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (October 5-7, 2012)	Internati onal	Proceedi ngs
8	2012	Roshan Lal Viridi	GUIDELINES FOR DESIGN FOR MANUFACTURING AND ASSEMBLY: A REVIEW	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (October 5-7, 2012)	Internati onal	Proceedi ngs
9	2013	Jaskirat Singh ,Rosh an Lal Viridi ,Khush deep Goyal	EXPERIMENTAL INVESTIGATION OF MECHANICAL PROPERTIES OF JOINTS FABRICATED BY FSW OF ALUMINUM ALLOYS 5083 AND 6063 WITH ROUND AND SQUARE TOOL PIN PROFILES	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (October 3-6, 2013)	Internati onal	Proceedi ngs
10	2013	Jaskirat Singh ,Rosh an Lal Viridi ,Khush deep Goyal	RECENT DEVELOPMENTS IN FRICTION STIR WELDING OF ALUMINUM ALLOYS: A REVIEW	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (October 3-6, 2013)	Internati onal	Proceedi ngs
11	2014	Vijay Kumar,Rosh an Lal Viridi ,	A SYSTEM FOR COMPUTER AIDED GATING DESIGN FOR SINGLE AND	International Conference on Advancements and Futuristic Trends in	Internati onal	Proceedi ngs

			MULTI-CAVITY INJECTION MOULDS	Mechanical and Materials Engineering (October 8-6, 2013)		
12	2014	Amandeep Singh, Roshan Lal Virdi, Khushdeep Goyal	SLURRY EROSION OF HYDRO POWER PLANTS: A REVIEW	NATIONAL CONFERENCE ON MECHANICAL ENGINEERING(7NOV,2014)	National	Proceedings
13	2016	Roshan Lal Virdi, Sukhpal Singh Chatha, Hazoor Singh	Potential of Nanofluids as Cutting Fluids - An evolution	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (Feb 25-27, 2016)	International	Proceedings
14	2016	Roshan Lal Virdi, Prince Chawla, Supinderjit Singh	TO COMPARE AND OPTIMIZATION OF MATERIAL REMOVAL RATE OF CRYOGENICALLY TREATED AND UNTREATED COPPER TOOLS USING EDM	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (Feb 25-27, 2016)	International	Proceedings
15	2016	Roshan Lal Virdi, Prince Chawla, Supinderjit Singh	TO COMPARE AND OPTIMIZATION OF TOOL WEAR RATE OF CRYOGENICALLY TREATED AND UNTREATED COPPER TOOLS USING EDM	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (Feb 25-27, 2016)	International	Proceedings
16	2017	Roshan Lal Virdi, Vijayender Singh	Effect on Hardness and Tensile Strength of 5754 Aluminium Alloy by Friction Stir Processing	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (Nov 2-4, 2017)	SUS Tangori	International
17	2018	Roshan Lal Virdi	Experimental Evaluation of the forces in Minimum Quantity Lubrication on	International Conference on Advances in Business and Engineering for Sustainability March 2018	ABES Noida	International

			machining of AISI 4130 using vegetable oils			
18	2018	Roshan Lal Virdi	Effect of Minimum Quantity Lubrication on temperature dissipation in machining of AISI 4130	International Conference on Advances in Business and Engineering for Sustainability March 2018	ABES Noida	International
19	2018	Roshan Lal Virdi ,Sukhpal Singh Chatha ,Hazoor Singh	VEGETABLE OIL BASED NANOFLUIDS UNDER MINIMUM QUANTITY LUBRICATION MACHINING PROCESS	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (Nov 15, 2018)	Panjab University Campus Bajwara	International
20	2018	Roshan Lal Virdi ,Sukhpal Singh Chatha ,Hazoor Singh	ENVIRONMENT FRIENDLY - MINIMUM QUANTITY LUBRICATION TECHNIQUE	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (Nov 15, 2018)	Panjab University Campus Bajwara	International
21	2019	Roshan Lal Virdi ,Sukhpal Singh Chatha ,Hazoor Singh	Performance evaluation of Minimum Quantity Lubrication grinding of hard to machine material under the influence of CuO based Nanofluids	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (Dec 5-7, 2019)	IIT Ropar	International
22	2019	Roshan Lal Virdi ,Sukhpal Singh Chatha ,Hazoor Singh	Minimum Quantity Lubrication Technique For Machining Processes - Alternative to Conventional Cooling System	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (Dec 5-7, 2020)	IIT Ropar	International
23	2020	Roshan Lal Virdi ,Sukhpal Singh Chatha ,Hazoor Singh	Minimum Quantity Lubrication technique: An emerging alternative to conventional cooling techniques	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (Dec 19, 2020)	MRSPTU Bathinda	International

24	2020	Roshan Lal Virdi, Sukhpal Singh Chatha, Hazoor Singh	Performance of Minimum Quantity Lubrication (MQL) technique compared to other conditions of lubrication	International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (Dec 19, 2019)	MRSPTU Bathinda	International

Book Chapters:

1. Singh B., Singh H., Lal Virdi R., Goyal K. (2022) Experimental Investigation of Vegetable Oils-Based Minimum Quantity Lubrication Grinding by Using Ionic Liquid. In: Srinivasa Pai P., Krishnaraj V. (eds) Sustainable Machining Strategies for Better Performance. Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-16-2278-6_16

2. Singh H., Singh B., Virdi R.L. (2022) Exploration of Effectiveness of Ionic Liquid Adopted as an Additive to the Vegetable Oils. In: Srinivasa Pai P., Krishnaraj V. (eds) Sustainable Machining Strategies for Better Performance. Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-16-2278-6_15

3 R.L. Virdi, A. Pal, S.S. Chatha, H.S. Sidhu, (2023) An Environment-Friendly Emerging Technique for Machining: Minimum Quantity Lubrication, in: Sustainable Material, Design, and Process, CRC Press, pp. 169-184.