



**NATIONAL INSTITUTE OF TECHNOLOGY,  
HAMIRPUR**

**INSTITUTE NEWSLETTER**

# **UTKRANT**

*Volume 12, Issue 1, 2022*

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*Secured 9th Rank in Indian Institutional Ranking Framework (IIRF) 2022  
Top 30 Architecture Colleges (Govt) in India*



## MESSAGE FROM DIRECTOR

Greetings from the National Institute of Technology Hamirpur, Himachal Pradesh!

Issuing this newsletter is a great pleasure for all of us, and for myself, as it is like providing my service to the Institute I am very attached to. By publishing this newsletter we are taking a step ahead toward knowledge sharing. It is only through sharing knowledge that we evolved as the "learned" species in this widely diverse world of organisms. The current edition of the NIT Hamirpur newsletter is a humble effort to share and showcase to our members the learnings, and the insights of the research & innovation going on in the institute. I heartily congratulate all for initiating such a new concept for our institute in the form of this newsletter. Despite some bottlenecks, our learned faculty has always been enthusiastic about the pursuit of knowledge, and through this newsletter makes a humble effort to share knowledge with peers in the field of engineering education. The NIT Hamirpur newsletter is a step forward in knowledge sharing. It is a matter of pride for the whole of the NIT Hamirpur family, as we constantly march ahead in teaching-learning, research and innovation and keep pace with all other institutes of eminence in the field of Engineering and Technology.



**DR. H.M. SURYAWANSHI**  
**DIRECTOR**

NIT Hamirpur has always provided regional development services through the guidance and direction of the Government of India initiatives. The faculty believed in developing intelligence from diverse sources and using the same for the upliftment of those sections of society who look up for guidance in any field. Intelligence is related to knowing something that can be confidently applied to a particular context. But new situations require new solutions, and in these times we need to work and think in new ways. This shift in stance causes a change in perspective. Changes in perspective, large or small, help us acquire new knowledge. Through this Newsletter, showcasing some of our activities, we seek to spread the word about our humble contribution to engineering education. The parameters of the NIRF ranking system are being meticulously worked upon and by the following year, we are sure to be at a higher ranking. Our valued faculty addresses the gap between what we are giving and what we are capable of giving, and once we direct all our resources and strengths, we will become what we aim for. ...the best! When we feel connected to the moral purpose of our work, we develop new perspectives and begin to behave differently. Speaking of "moral purpose" teaching our students to be good human beings along with good engineers is all that defines our moral purpose.

**DR. H.M. SURYAWANSHI**  
**DIRECTOR**

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*Published by Faculty Incharge (News Bulletin)*



## Ph.D. Completed

Sr. No.	Title of Thesis	Supervision Status	Ph.D Thesis Status [Completed / Submitted]
1	Study of Hybrid Renewable Energy Generation System	Dr.Mamta Awasthi	Submitted
2	Heat Transfer and Friction Characteristics of An Artificially Roughened Solar Air Heater	Dr.N.S.Thakur	Completed
3	Secrecy Performance of Energy Harvesting based Cognitive Radio Networks. Candidate Name: Anshu Thakur	Dr. Ashok Kumar	completed
4	Study of Mixed Carbon Nanaotube Bundles for VLSI Interconnects in Sub-threshold Regime	Dr. Rohit Dhiman	Awarded
5	Performance Investigations in Nanotube Junctionless Field Effect Transistor from GIDL and Reliability Perspectives	Dr. Rohit Dhiman	Awarded
6	Resource Allocation Techniques for Efficient Spectrum Management in Vehicular Cognitive Radio Networks	Dr. Krishan Kumar	Awarded
7	Brain-Empowered Dynamic Spectrum Allocation in Cooperative Cognitive Radio Networks	Dr. Krishan Kumar	Awarded
8	NOMA Based Spectrum Sharing Schemes for Cognitive Radio Networks	Dr. Krishan Kumar	Awarded
9	Stochastic Optimization Using Computational Intelligence Techniques	Dr. OP Yadav, Caretaker Supervisor	Awarded

## Patents Filed

S. No.	Name of the Party with whom MOU signed	Patent Application Number	Inventor/ Author
1	An autonomous secure method to control counterfeiting in the Aviation Supply Chain using Blockchain Technology	2021105790 (Granted)	Arif, M.; Adil, M. & Ullah, A
2	A system for identifying indicators of sustainable smart-agriculture driven by big data using modified-TISM	2021105805 (Granted)	Adil, M.; Dogra, N. & Ullah, A
3	System for Assessing Service Delivery of Self-Service Teller Machine	2021107108 (Granted)	Adil, M.
4	Graphene oxide Reinforced Geopolymer Concrete Comprising Waste Foundry sand and Recycled concrete Aggregates	201911036565A	Dr. Pardeep Kumar DoCE
5	Continuous Roller Garbage Collecting Machine	201911014051A	Dr. Rajesh Sharma DoME
6	Real Time Smart Honking System	201711042577A	Dr. Surender Soni DoE&CE
7	Sulfonamides Analogues to be anticancer, antibacterial, antifungal	201711026145A	Dr. Pamita Awasthi DoCHY



## Journal Papers

Sr. No.	Paper Information (in IEEE Format)	Journal Status
		[SCI / Scopus]**
1	Vimal Kumar, Mohd. Ashraf Iqbal, Achal Kumar Mittal, "Progressive damage in pretensioned and reinforced concrete plates against repeated impacts", International Journal of Protective Structures, 2022, 1–35. <a href="https://doi.org/10.1177/20414196221078025">https://doi.org/10.1177/20414196221078025</a>	SCI
2	Poddar, A., Kumar, N., Kumar, R., Shankar, V. (2021) Application of regression modeling for the prediction of field crop coefficients in a humid sub-tropical agro-climate: a study in Hamirpur district of Himachal Pradesh (India). Modeling Earth Systems and Environment, pp. 1-13. <a href="https://doi.org/10.1007/s40808-021-01234-0">https://doi.org/10.1007/s40808-021-01234-0</a>	Scopus
3	Kumar, N., Rustum, R., Shankar, V., & Adeloye, A. J. (2021). Self-organizing map estimator for the crop water stress index. Computers and Electronics in Agriculture, 187, 106232. <a href="https://doi.org/10.1016/j.compag.2021.106232">https://doi.org/10.1016/j.compag.2021.106232</a>	SCI
4	Kumari, S., Chauhan, A. & Shankar, V., (2021). Assessment of climate change implications on landslides in mid and high hills of Himachal Pradesh, India. Arabian Journal of Geosciences, 14, 1323, pp. 1-15. <a href="https://doi.org/10.1007/s12517-021-07668-1">https://doi.org/10.1007/s12517-021-07668-1</a>	SCI
5	CSP Oha, Vijay Shankar, Navsal Kumar, Chauhan N. S., (2021). Evaluation of discharge coefficients for bottom rack flow under constant and variable specific energy. ISH Journal of Hydraulic Engineering (Accepted).	Scopus
6	Abhishish Chandel, Shivali Sharma, Vijay Shankar (2022). Prediction of hydraulic conductivity of porous media using a statistical grain-size model. Water Science and Technology (Accepted)	SCI
7	Bhavna and Biswas, S. (2022). "An ANN-based Framework for Estimating Inconsistency in Lateral Placement of Heterogeneous Traffic." Physica A: Statistical Mechanics and Its Applications, Elsevier. Vol. 592. DOI: 10.1016/j.physa.2021.126847.	Scopus
8	Pandey, A., Sharna, M. and Biswas, S. (2022). "Concept of Heterogeneity Index for Urban Mixed Traffic." International Journal of Transportation Science and Technology. Elsevier. DOI: 10.1016/j.ijtst.2022.02.008.	Scopus
9	Prashant Malik, Mamta Awasthi, Sunanda Sinha(2022) A techno-economic investigation of grid integrated hybrid renewable energy systems,Sustainable Energy Technologies and Assessments, Volume 51,Article 101976,ISSN 2213-1388,Elsevier, Impact Factor: 5.353	
10	P Malik, M Awasthi (2021) Techno-economic and Environmental Evaluation of Producer Gas-Based IC Engine in a Hybrid Energy System, IN: Alternative Fuels and Advanced Combustion Techniques as Sustainable Solutions for Internal Combustion Engines Publication: Springer nature, Singapore, ISBN: 978-981-16-1513-9, pp 59-93 (Scopus, Web of science)	scopus
11	P Malik, M Awasthi, S Sinha (2021) Techno-economic and environmental analysis of biomass-based hybrid energy systems: A case study of a Western Himalayan state in India, Sustainable Energy Technologies and Assessments 45, Article 101189, Elsevier, IF: 5.353, <a href="https://doi.org/10.1016/j.seta.2021.101189">https://doi.org/10.1016/j.seta.2021.101189</a> (SCI Indexed)	SCI
12	Awasthi, M. (2021). Distribution of Phytoplankton and Periphyton In The Shallow Rice-Fish Fields Of Arunachal Pradesh, India, International Journal of Algae, Volume 23, Issue 3, pg 223-236, Begell House (Scopus Indexed)	Scopus



13	Malik, P., Awasthi, M., & Sinha, S. (2021). Biomass-based gaseous fuel for hybrid renewable energy systems: An overview and future research opportunities. <i>International Journal of Energy Research</i> 45 (3), 3464-3494, <a href="https://doi.org/10.1002/er.6061">https://doi.org/10.1002/er.6061</a> , Wiley (SCI Indexed), Impact factor:5.164	SCI
14	Bisht, A.S., Thakur, N.S. (2021) Identification & Prioritisation of Barriers in the Growth of Pine Needle Biomass Gasification Plants (< 250 kW) for Electricity Generation in the Western Himalayan Region: Uttarakhand, India. <i>Process Integr Optim Sustain</i> (2021). <a href="https://doi.org/10.1007/s41660-021-00199-y">https://doi.org/10.1007/s41660-021-00199-y</a> , Springer (Scopus)	Scopus
15	Virajan Verma & K. Nallasivam, "One dimensional finite element analysis of thin walled box girder bridge" (2020 ),ISSN 2364-4176 Volume 5 Number Innov. Infrastruct. Solut. (2020) 5:1-24 DOI 10.1007/s41062-020-00287-x, Innovative Infrastructure Solutions, Springer	Scopus
16	Shakya, R., Singh, Manendra., Sarda, V.K. et al. Scour depth forecast modeling caused by submerged vertical impinging circular jet: a comparative study between ANN and MNL. <i>Sustain. Water Resour. Manag.</i> 8, 43 (2022). <a href="https://doi.org/10.1007/s40899-022-00634-z">https://doi.org/10.1007/s40899-022-00634-z</a>	Scopus
17	Virajan Verma & K. Nallasivam, "Free vibration behaviour of thin-walled concrete box-girder bridge using Perspex sheet experimental model", 106/2 (2021) 56-76. DOI: <a href="https://doi.org/10.5604/01.3001.0015.2418">https://doi.org/10.5604/01.3001.0015.2418</a> , Journal of Achievements in Materials and Manufacturing Engineering	Scopus
18	Virajan Verma ,Abhilash Malloth & K. Nallasivam, " Modal analysis of a thin-walled box-girder Bridge and Railway track using finite element framework" Volume 4, Issue 4, Serial No 16 Doi: 10.22115/CEPM.2021.278798.1165, Computational Engineering and Physical Modeling	Scopus
19	Virajan Verma & K. Nallasivam, "Static response of curved steel thin-walled box-girder bridge subjected to Indian railway loading" Volume.108, Issue-2 DOI: 10.5604/01.3001.0015.5065, Journal of Achievements in Materials and Manufacturing Engineering	Scopus
20	Pawan Kumar Pathak, S. Padmanaban, Anil Kumar Yadav, PA Alvi, Baseem Khan, "Modified incremental conductance MPPT algorithm for SPV based grid-tied and stand-alone system," <i>IET Generation, Transmission &amp; Distribution</i> , Wiley, vol. 16, no. 4, pp. 776–791, February 2022.	SCI
21	Pawan Kumar Pathak, Anil Kumar Yadav and PA Alvi, "A state-of-the-art review on shading mitigation techniques in solar photovoltaics via meta-heuristic approach," <i>Neural Computing and Applications</i> , Springer, vol. 34, no.1, pp. 171-209, January 2022	SCI
22	Vineet Kumar, R. Naresh and Veena Sharma, "Profit based Unit Commitment Problem Solution using Metaheuristic Optimization Approach," <i>International Journal of Systems Science: Operations and Logistics</i> , pp. 1-24, January 2022. DOI: 10.1080/23302674.2022.2037026	SCI
23	V. Kumar, Veena Sharma, Ram Naresh and Vineet Kumar, "Optimal Voltage and Frequency Control in Solar Integrated Power Network," <i>Distributed Generation and Alternative Energy Journal</i> , vol. 30, Issue 3, pp.703-724, February 2022. DOI: 10.13052/dgaej2156-3306.37315.	SCI
24	Jai Prakash, J Cho, YK Mishra, Photocatalytic TiO <sub>2</sub> nanomaterials as potential antimicrobial and antiviral agents: Scope against blocking the SARS-COV-2 spread, <i>Micro and Nano Engineering</i> , 14 (2022) 100100 <a href="https://doi.org/10.1016/j.mne.2021.100100">https://doi.org/10.1016/j.mne.2021.100100</a>	SCI and Scopus
25	Samriti, Prateek, Manish, Raju Gupta, Jai Prakash, Hydrothermal synthesis and Ta doping of TiO <sub>2</sub> nanorods: Effect of soaking time and doping on optical and charge transfer properties for enhanced SERS activity, <i>Materials Chemistry and Physics</i> , 278	Scopus



	(2022) 125642 <a href="https://doi.org/10.1016/j.matchemphys.2021.125642">https://doi.org/10.1016/j.matchemphys.2021.125642</a>	
26	Jai Prakash, Samrit, D. wijesundera, I. Rajapaksa, Ion beam nano-engineering of surfaces for molecular detection using surface enhanced Raman scattering, Molecular System Design and Engineering, (Accepted, 14th March 2022) <a href="https://doi.org/10.1039/D2ME00006G">https://doi.org/10.1039/D2ME00006G</a>	Scopus
27	Samriti, Manish, Z.Chen, S. Sun, Jai Prakash, Design and engineering of graphene nanostructures as independent solar-driven photocatalysts for emerging applications in field of energy and environment Molecular System Design and Engineering, 7 (2022) 213 – 238. <a href="https://doi.org/10.1039/D1ME00179E">https://doi.org/10.1039/D1ME00179E</a>	
28	Samriti, V. Rajput, R. K. Gupta, Jai Prakash, Engineering metal-oxide semiconductor nanostructures for enhanced charge transfer: Fundamentals and emerging SERS applications, J. Materials Chemistry C 10 (2022) 73-95 DOI: 10.1039/D1TC04886D	Scopus
29	Swati Verma, DS Mal, PR de Oliveira, B.C.Janegitz, Jai Prakash, R. K. Gupta, A facile synthesis of novel polyaniline/graphene nanocomposite thin films for enzyme-free electrochemical sensing of hydrogen peroxide, Molecular System Design and Engineering, 7 (2022) 158-170 <a href="https://doi.org/10.1039/D1ME00130B">https://doi.org/10.1039/D1ME00130B</a>	Scopus
30	Z. Chen, G. Zhang, H. Chen, Jai Prakash, Y. Zheng, Shuhui Sun, Multi-metallic catalysts for the electroreduction of carbon dioxide: Recent advances and perspectives, Renewable and Sustainable Energy Reviews, 155C (2022) 111922. 10.1016/j.rser.2021.111922	Scopus
31	Kaur M, Kaushal R. Synthesis and in-silico molecular modelling, DFT studies, antiradical and antihyperglycemic activity of novel vanadyl complexes based on chalcone derivatives. Journal of Molecular Structure. 2022 Mar 15;1252:132176	Scopus
32	Rana, S., Sarmah, S., Roy, A. S., Ghosh, K. S. Elucidation of molecular interactions between human gammaD-crystallin and quercetin, an inhibitor against tryptophan oxidation, J. Biomol. Structure Dynamics(2021) 39:5, 1811-1818	SCI
33	Vatsal M, Sharma A, Awasthi P, 1,5- Benzosulfonamide anthracenedione analogues of mitoxatrone as antibacterial and anticancer agents (2022) 61,pp	SCI
34	Robin Singh Rana and Nitin Gupta, "Efficient Task Scheduling in Cloud Environment," in International Journal of Communication Systems, Wiley, <a href="https://doi.org/10.1002/dac.5158">https://doi.org/10.1002/dac.5158</a> , March 2022	SCI
35	Kartik Saxena, Nitin Gupta, Jahnvi Gupta, Deepak K. Sharma, Kapal Dev, "Trajectory Optimization for the UAV assisted Data Collection in Wireless Sensor Networks," in Wireless Networks, Springer, Mar 2022.	SCI
36	Deepak Kumar Sharma, Kartik Krishna Bhardwaj, Siddhant Banyal, Riyanshi Gupta, Nitin Gupta, and Lewis Nkenyereye, "An Opportunistic Approach for Cloud Service based IoT Routing Framework Administering Data, Transaction, and Identity Security", in IEEE Internet of Things Journal, Vol. 9 (4), pp. 2505-2512, Feb 2022.	SCI
37	Richa sharma, T.P Sharma, Ajay Kumar Sharma, "Trust Assessment based Stable and Attack Resistant Grouping Strategy for Holistic Data Dissemination in Internet of Vehicles", accepted in International Journal of Sensor Networks, Inderscience, Mar 2022	SCI
38	Aniket Sharma and Vandna Sharma , "An approach to energy efficient design for naturally ventilated mass housing using life cycle energy and life cycle cost analysis" International Journal of Advance and Innovative Research, pp:70-79, ISSN: 2394 – 7780, 03.09.2021	
39	Vandna Sharma and Aniket Sharma, "Investigation into energy efficient and sustainable aspects of vernacular architecture as comparative with modern architecture: a case study of Hamirpur district, Himachal Pradesh" International	



	Journal of Advance and Innovative Research(Conference issue), pp:230-236, 03.09.2021	
40	Aniket Sharma and Vandna Sharma, "Patterns of urban development and their problems in a hilly town of Himachal Pradesh: a case of old Manali" International Journal of Advance and Innovative Research(Conference issue), pp:260-265, 03.09.2021	
41	Vandna Sharma and Aniket Sharma, "Identification of urban problems and sustainability issues in small village of Dungri: a case of Manali" International Journal of Advance and Innovative Research (Conference issue), pp:192-197, 03.09.2021	
42	M. Sadiq, M. Adil, M. and J. Paul, "Eco-friendly hotel stay and environmental attitude: A value-attitude-behaviour perspective," International Journal of Hospitality Management, Vol. 100, pp. 103094, 2022.	SCI
43	M. Adil, M. Nasir and M. Kumar, "Decoding Tourist Satisfaction and Loyalty at Indian Hotels: An Empirical Study", International Journal of Productivity and Quality Management, vol. 34, pp. 561-580, 2021.	Scopus
44	N. Dogra, M. Adil, A. Dhamija, M. Kumar and M. Nasir, "What makes a community sustainably developed? A review of 25 years of sustainable community tourism literature", Community Development, 2022. <a href="https://doi.org/10.1080/15575330.2021.2015606">https://doi.org/10.1080/15575330.2021.2015606</a> .	Scopus
45	F. Rafiq, S.K. Chishty and M. Adil, "Explanatory or Dispositional Optimism: Which Trait Predicts Eco-Friendly Tourist Behavior?", Sustainability, vol. 14, pp. 2994, 2022.	SCI
46	Gagnesh Kumar and Sunil Agrawal, "Suppression of Ambipolar Current in Enhanced Gate based Schottky Barrier CNTFET Using Ant Lion Optimization," Silicon, Springer, DOI: 10.1007/s12633-022-01807-3, March 2022.	SCI
47	Souman Mondal, Dipen Bepari and Sankalita Biswas, "Performance of a multihop Cognitive Radio Network with diversity under imperfect CSI", International Journal of Electronics Letters just-accepted (2022). DOI: <a href="https://doi.org/10.1080/21681724.2021.2025439">https://doi.org/10.1080/21681724.2021.2025439</a>	SCI
48	Goswami, Ashish, and Ashok Kumar. "Statistical Characterization and Performance Evaluation of alpha-eta-mu/Inverse Gamma and alpha-kappa-mu/Inverse Gamma Channels," WIRELESS PERSONAL COMMUNICATIONS (2022).	SCI
49	Priya Kaushal and Gargi Khanna, The role of 2-Dimensional materials for electronic devices, vol.143, Materials Science in Semiconductor Processing, Elsevier, 2022	SCI
50	Mekala Girish Kumar, Yash Agrawal, Vobulapuram Ramesh Kumar, and Rajeevan Chandel, "A prominent unified crosstalk model for linear and sub-threshold regions in mixed CNT bundle interconnects," <i>Microelectronics Journal</i> , <a href="https://doi.org/10.1016/j.mejo.2021.105294">https://doi.org/10.1016/j.mejo.2021.105294</a> , vol. 118, no.105294, pp. 1-11, Dec 2021.	SCI
51	Animesh Srivastava and Rajeevan Chandel, "A Novel Co-planar Five Input Majority Gate Design in Quantum-Dot Cellular Automata," <i>IETE Technical Review</i> , Taylor & Francis Publication, 2021. <a href="https://doi.org/10.1080/02564602.2021.1914205">https://doi.org/10.1080/02564602.2021.1914205</a> .	SCIE
52	Ashish Singh, Rajeevan Chandel, and Rohit Dhiman, "Proposal and analysis of relative stability in mixed CNT bundle for sub-threshold interconnects," <i>Integration-the VLSI Journal, Elsevier</i> , vol. 80, pp. 29-40, 2021. <a href="https://doi.org/10.1016/j.vlsi.2021.05.004">https://doi.org/10.1016/j.vlsi.2021.05.004</a> .	SCI
53	Param Dev, Surendra Kumar Gupta, Amit Bage and Lakhindar Murmu, "High Isolated MIMO Antenna for WLAN Applications" Journal of Circuits, Systems, and Computers (JCSC) , <a href="https://doi.org/10.1142/S0218126622501092">https://doi.org/10.1142/S0218126622501092</a> (2021)	SCI
54	SURENDRA KUMAR GUPTA, AMIT BAGE, MILKA M. POTREBIĆ, LAKHINDAR MURMU " Ultra-Wideband Slot-Loaded Planar Antenna for Future 5G Millimeter Wave" <i>TEHNIKA – ELEKTROTEHNIKA</i> , vol.70, no. 5, 2021 DOI: 10.5937/tehnika2105623K	



55	Ashok Kumar, Krishan Kumar, "A Game Theory based Hybrid NOMA for Efficient Resource Optimization in Cognitive Radio Networks," IEEE Transactions on Network Science and Engineering, vol.8,no.4,pp.3501-3514, 2021	
56	Amandeep Kaur, Krishan Kumar, "A Reinforcement Learning based Green Resource Allocation for Heterogeneous Services in Cooperative Cognitive Radio Networks," IEEE Transactions on Network and Service Management, 2021 (Accepted)	
57	Mani Shekhar Gupta, Krishan Kumar,"Group Mobility Assisted Network Selection Framework in 5G Vehicular Cognitive Radio Networks ," Physical Communication ( By Elsevier Publication), Volume 51, 2022	
58	Yadav, M. V., Baudha, S., Bansal, Y., & Kumar, S. A Novel Compact Rectangular Slot Antenna with Ladder Structure for Ultra-Wideband Applications. Telecommunications and Radio Engineering, 2022	SCOPUS
59	Parmar, Karan Singh, Aman Kumar, and Uppal Kalita. "ECG signal based automated hypertension detection using fourier decomposition method and cosine modulated filter banks." Biomedical Signal Processing and Control 76 (2022): 103629	
60	P. K. Sharma, Ankit Bajpai, Rajneesh Kumar, Analysis of two temperature thermoelastic diffusion plate with variable thermal conductivity and diffusivity, Waves in Random and Complex Media, DOI: 10.1080/17455030.2021.1983232	SCI
61	Geetanjali Gilhotra, P. K. Sharma, Visco-thermodiffusive elastic interactions in plate within the framework of two temperature fractional thermoelastic models, Indian J Phys, DOI: <a href="https://doi.org/10.1007/s12648-022-02313-3">https://doi.org/10.1007/s12648-022-02313-3</a>	SCI
62	Jain, Subit K., Swati Tyagi, Neeraj Dhiman, and Jehad Alzabut. "Study of dynamic behaviour of psychological stress during COVID-19 in India: A mathematical approach." Results in Physics 29 (2021): 104661.	SCI
63	Sudeb Majee, Subit K. Jain, Rajendra K. Ray, Ananta K. Majee. A fuzzy edge detector driven telegraph total variation model for image despeckling. Inverse Problems & Imaging, 2022, 16 (2) : 367-396. doi: 10.3934/ipi.2021054	SCI
64	A.K. Nain, R.K. Vats and A. Kumar: Caputo-Hadamard fractional differential equation with impulsive boundary conditions, Journal of Mathematical Modeling, 9(1) (2021), 93-106., A&I: Scopus, ISSN: 2345-394X	Scopus
65	A.K. Nain, R.K. Vats and S.K. Verma, Existence of solutions for non-linear Hadamard type fractional differential equation with mixed fractional boundary conditions, Dynamics of Continuous, Discrete and Impulsive Systems, 28 (2021), 193-206	Scopus
66	Sachin Kumar Verma, Ramesh Kumar Vats, Avadhesh Kumar, Velusamy Vijayakumar Anurag Shukla: A discussion on the existence and uniqueness analysis for the coupled two-term fractional differential equations, Turkish Journal of Mathematics, 46(2022), 516-532.	SCI
67	A.K.Nain, R.K. Vats and A. Kumar: Coupled fractional differential equations involving Caputo-Hadamard derivative with nonlocal boundary conditions, Mathematical Methods in the Applied Sciences, 44(5) (2021), 4192-4204	SCI
68	A. K. Kushwaha, Y. D. Sharma, Significance of vertical vibration on the stability of thermo-bioconvection in a suspension of oxytactic microorganisms <a href="https://doi.org/10.1016/j.icheatmasstransfer.2022.105943">https://doi.org/10.1016/j.icheatmasstransfer.2022.105943</a>	SCI
69	A. K. Kushwaha, Y. D. Sharma, S. Saini, Impact of vertical vibration and gyrotactic microorganisms on stability of thermo-bioconvection, Mechanics Research Communications 116 (2021) 103769.	SCI
70	A. K. Kushwaha, Y. D. Sharma, S. Saini, An analytic study of development of bioconvection in a suspension of randomly swimming gyrotactic microorganisms and nanoparticles, Int. J. Nanoparticles, Vol. 13, no.4, pp. 205-216	Scopus





## Conference Papers

Sr. No	Title of the paper	Conference Status	Publication	Authorship
1	Spatio-temporal assessment of seasonal trends and extreme indices of precipitation and temperature in Himalayan states of India. International conference on Hydraulics, water resources and coastal engineering (HYDRO 2021), December 23-25, 2021, SVNIT Surat.		December 2021	Suman Kumari and Vijay Shankar
2	Investigations on hydraulic conductivity assessment of porous media treated with fly ash. International conference on Hydraulics, water resources and coastal engineering (HYDRO 2021), December 23-25, SVNIT Surat.		December, 2021	Abhishish Chandel, Vijay Shankar and M A Alam
3	Regulation Of Human Impacts on the Riverine Ecosystem: Perspectives of Indian Parliamentarians. AGU Fall Meeting, 13-17 December, 2021, New Orleans LA USA		December, 2021	Adani Azhoni, Ian Holman, Robert Grabowski, Vijay Shankar, and Brij Bala
4	Impact Analysis of Water Quality Parameters for River Beas, Himachal Pradesh, India, International Conference “2nd Roorkee Water Conclave”, March 2nd -4th, Indian Institute of Technology Roorkee, India		March, 2022	Poddar, A., Mukate, S., Meersman, J., Vercruyssel, K., Azhoni, A., Bala, B., Grabowski, R. C., Holman, I., Shankar, V., Peng, J., Pal, S., Wang, X., & Zhang, Z
5	Physically based modelling techniques for landslide susceptibility analysis: A comparison. 2nd International Conference on Advances in Earth and Environmental Studies, February 25-26, 2022, National Institute of Technology, Raipur, Chhattisgarh, India.		February, 2022	Vinay Meena, Suman Kumari and Vijay Shankar
6	Effect of Earthquake on the Footing Placed on the Different Location of the Slope Surface, Proceedings of Indian Geotechnical Conference 2021 December 16-18, 2021, NIT Tiruchirappalli.	Scopus	December, 2021	Saraswat, S., Manendra Singh



7	Effect of Volume Loss during Tunnel Construction on the Ground Surface, Proceedings of Indian Geotechnical Conference 2021 December 16-18, 2021, NIT Tiruchirappalli	Scopus	December, 2021	Shakya, R., Manendra Singh
8	Static and Dynamic Study on the Performance of Modified Stone-Column in Ahmedabad Soil, Proceedings of Indian Geotechnical Conference 2021 December 16-18, 2021, NIT Tiruchirappalli	Scopus	December, 2021	Saraswat, S., Manendra Singh
9	“Hybrid operational approach for PV/DG microgrid without storage device”, In 2nd IEEE International Conference on Smart Technologies for Power, Energy and Control (STPEC 2021) ,Chouksey Engineering College, Bilaspur, Chhattisgarh,		19- 22 December 2021	Malik, P., Awasthi, M., and Sinha, S
10	Wind Contributed Load Frequency Control Scheme for Standalone Microgrid Using Grey Wolf Optimization	IEEE	Feb., 2022	Maloth Ramesh, <b>Anil Kumar Yadav</b>
11	Time Series Forecasting of Solar Power Generation Using Facebook Prophet and XG Boost	IEEE	Feb., 2022	Rahul Gupta, <b>Anil Kumar Yadav</b> , Shyama Kant Jha, Pawan Kumar Pathak
12	Artificial intelligence and magnetic field based fault detection system for microgrid	Scopus	22-Dec-21	Co-Author (Supriya Jaiswal)
13	Ant Lion Optimization Based OPF Solution Incorporating Wind Turbines and Carbon Emissions	Scopus	08-Feb-22	Co-Author (Supriya Jaiswal)
14	Game Theory based EV Charge Scheduling: A Comprehensive Review	Scopus	08-Feb-22	Co-Author (Supriya Jaiswal)
15	IoT Enabled Condition Monitoring of Low Voltage Motors using Fuzzy Inference System	Scopus	10 Jan,2022	Author (Supriya Jaiswal)
16	Instantaneous PV Array Power-Based Estimation of Reference Speed for Speed Control of Solar PV-Fed BLDC Motor Drive	Scopus	Dec-21	Dr. Rajan Kumar, Co-Author (Main Supervisor)
17	Study of Energy Management for Hybrid Energy Storage System Connected to Standalone PV Based Microgrid	Scopus	Dec-21	Dr. Ram Niwash Mahia, Co-Author (Main Supervisor)



18	Maximum Power Tracking With Perturb & Observation Techniques Using Single Ended Primary Inductor Converter	Scopus	Dec-21	Dr. Ram Niwash Mahia, Co-Author (Main Supervisor)
19	An Enhanced Control Methodology for LVRT Improvement of DFIG under Fault Condition	IEEE	Feb-22	B. K. Biswal and O. P. Rahi
20	Charging and Discharging of Battery in a PV system using Fuzzy Logic Controller	IEEE	Feb-22	Atul Nayan and O. P. Rahi
21	Fuzzy Logic based Control Technique using MPPT for Solar PV System	IEEE	Feb-22	R. K. Rai and O. P. Rahi
22	Classification of Human Posture Data using Wearable Sensors", in IEEE GLOBECOM, Madrid, Spain, Dec 2021.	Scopus	Dec-21	Jahnvi Gupta, Nitin Gupta, Mukesh Kumar, Ritwik Duggal and Joel J. P. C. Rodrigues,
23	Reclaiming and Rejuvenating Urban Water Bodies: Case of Mullassery Canal, Kochi, Kerala	International	Oct-21	Akhila N Menon, Puneet Sharma
24	Potential of elderly housing in India: A post Pandemic Scenario	International	Feb-22	Akash Pandey, Venu Shree
25	Optimization of building orientation and wwr for daylight in residential building in the subtropical highland Climate.	International	Feb-22	Venu Shree, Jai Prakash
26	"A Novel Approach for Excitation Codebook and Perceptual Weighting Filter Design," <i>3rd IEEE International Conference on Innovations in Power and Advanced Computing Technologies (i-PACT-2021)</i> , is jointly organized by University of Malaya (UM), Kuala Lumpur, Malaysia and Vellore Institute of Technology (VIT), Vellore, India, technically co-sponsored by IEEE PES, Malaysia, in association with IEEE NPSS-VIT, IEEE PES-VIT, IEEE IAS-VIT.	IEEE	27-29, November 2021	Bharat Kumar Jangid, Dilip Singh, Rajeevan Chandel, and Ashwani Rana
27	Modeling and Analysis of Cu-CNT Composite Through Glass Vias in 3D ICs Conference Location: Urbana, IL, USA	International Conference	13-15 Dec. 2021	Ajay Kumar and Rohit Dhiman
28	A Circularly Polarized Swastika Shaped Crossed Dipole Antenna for Cubesat,"	International Conference	11-13 Nov. 2021	Prashant Shah and Saurabh Kumar



## MOUs Signed

S. No.	Name of the Party with whom MOU signed	Date of Signing
1	National Institute of technical Teacher Training & Research Chandigarh	09/12/2021
2	University Institute of Technology , Shimla	18/11/2021
3	Chitkara University, Punjab	11/11/2021
4	Chitkara University, Himachal Pradesh, HP	11/11/2021
5	Sardar Vailabhbai Patel Cluster University Mandi	01/11/2021
6	Research for Resurgence Foundation, Nagpur	23/10/2021

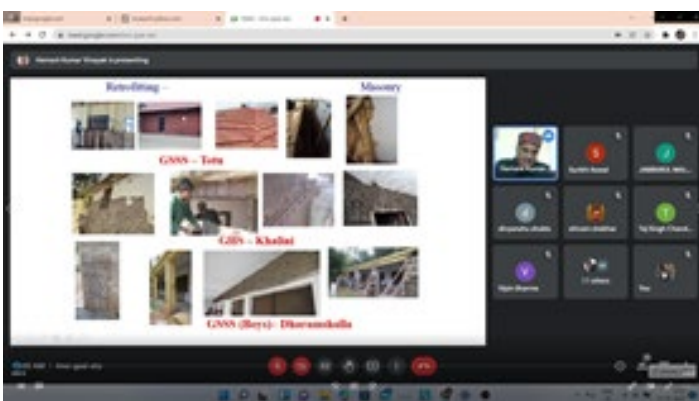
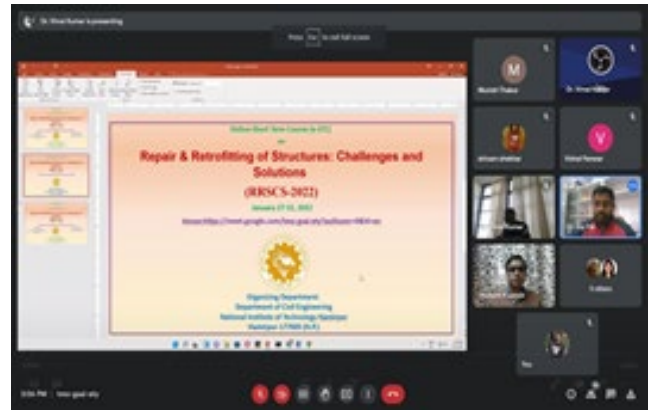
## R&D Projects

S. no	Name of Funding Agency and Amount	Name of PI (Department), Name of co-PI (Department)	Present Status of Project [Completed / Ongoing]
1.	Indian Institute of Remote Sensing (IIRS) under Indian Space Research Organisation (ISRO), Department of Space, GOI (Amount = 31.63 Lacs)	Dr Vijay Shankar, Department of Civil Engineering	Sanctioned (To start in April 2022)
2.	Development of Intelligent Controllers for Back-EMF-Based Position Sensorless Brushless DC Motor Drives Employed in Solar Photovoltaic Water Pumping Systems Science and Engineering Research Board, Government of India (Amount: Rs. 28,71,570)	Dr. Rajan Kumar (Department of Electrical Engineering)	Ongoing
3.	Field Efficacy of JH mimics as Nano Pesticides: A New Generation Nanocides Department of Science & Technology, Government of India (WISE-KIRAN Division) Amount: 31,36,222/-	Dr. Pamita Awasthi :Scientist Mentor Dr. Priyanka : PI Department: Chemistry	On Going
4.	Through Package Carbon Nanotube Bundle Vias in Glass Interposer for Heterogeneous Three-Dimensional Integration	Science and Engineering Research Board, Department of Science and Technology	Dr. Rohit Dhiman
5.	Development of automated detection and classification software to map lunar craters in the polar regions	ISRO	Dr. Rakesh Sharma, Dr. Ashok Kumar
6.	AI based Automatic Attendance and Behavior Monitoring Solutions	Isnartech Pvt. Ltd, 6 Lakhs	Dr. Nidhi Gupta (Co-PI)

## Workshop / FDP/ STCs

### *Repair & Retrofitting of Structures: Challenges and Solutions (RRSCS-2022) From January 27-31, 2022*

"Structural engineering is a sub-discipline of civil engineering in which structural engineers are trained to design the 'bones and muscles' that create the form and shape of man-made structures. Structural engineers need to understand and calculate the stability, strength and performance of structures. The structural designs are integrated with those of other designers such as architects and building services engineer and often supervise the construction of projects by contractors on site. Most of the important structures were constructed a long back and after the construction of those structures, the IS codes were revised. Moreover, the structure degrades over time. Hence, repairing and retrofitting is essential in order to meet the present codal requirements. This workshop provides the different approaches for the repairing and rehabilitation of the existing structures so that the designed strength could be achieved. Furthermore, Retrofitting techniques were discussed to enhance the strength of the structure to meet the present codal provisions. The key objective of structural design is to ensure overall safety while performing its intended use. However, the structures show degradation over passes of time. Moreover, damaging seismic activities further reduce the strength and stability of the structures. Hence, the old and degrading structures have started to show a serious need for additional repairs and retrofitting. Repairing and Retrofitting are perhaps the most ideal alternative to make an existing lacking structure protected against future dangers and other natural powers.

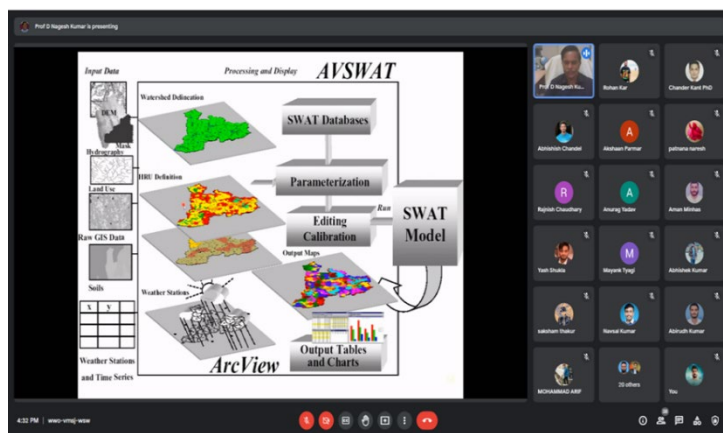
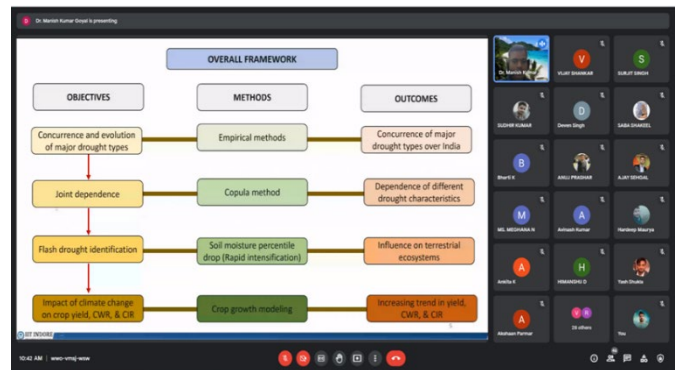


The primary aims of this e-STC were to enhance technical and professional competency as well as organizing skills of the faculty members for repairing and retrofitting the existing structures. The STC promoted interaction with professionals working in specific areas of research in Academic Institutions, Research Labs, and Industries. Also, exposure was provided to the audience from renowned speakers on the latest developments in Academia, Research and Industry. This program brought a positive transformation among the faculty members,

research scholar and participants from industries towards research work, and enabled the participants to develop competence in understanding recent advances in proposed topic of the STC. A total 37 participants were registered for the e-STC. The series of lectures covered in this course are Repairing and retrofitting of RCC structures, Repairing and retrofitting of steel structures, Repairing and retrofitting of non-engineered structures, Damage assessment techniques of structures, Structural Health Monitoring, Case studies etc. All the lectures were very informative and full of knowledge. In the course, the participants were educated with the most advanced technologies in the field of repair and retrofitting. The course would be very much helpful for the participants who are at the beginning of their research career and those who are at their middle level of research and those who are in practice. The course will motivate and inspire the participants to work in this advanced field of structural engineering."

## *Advanced Modelling and Innovations in Water Resources Engineering and Management (AMI WREM-2022), From 28th February to 4th March, 2022*

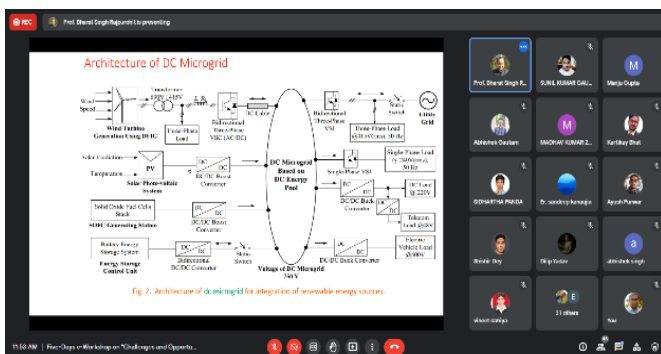
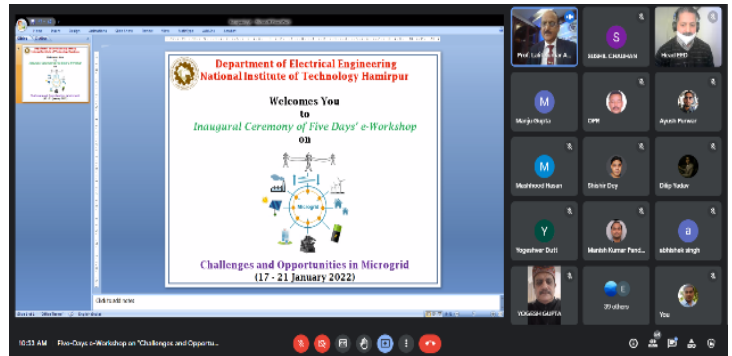
Water is a precondition to life on Earth and is essential for sustainable development. Safe drinking water and sanitation are human rights. Water including sanitation is critical for socio-economic development, food security, and healthy ecosystems, and is vital for reducing the global burden of disease and improving the health, welfare, and productivity of populations. Effective planning and management of water resources are required to meet the increased demand for water in the domestic, irrigation, and industrial sectors. For efficient planning and management of water resources, prediction of the various hydrological event such as rainfall-runoff correlation, forecasting of inflow into a reservoir, forecasting of rainfall, forecasting of evaporation, forecasting of maximum flood and optimum reservoir operation policy, etc. are required. Computational techniques are very effective to solve various issues and problems related to water resources engineering and management. The major issues in water resources engineering can easily be dealt with by understanding the concepts in the courses like hydrology, hydraulics, fluid mechanics, computational techniques, and the application of various mathematical models and software.



The primary aim of this e-STC is to enhance technical and professional competency as well as organizing skills of the faculty members in the field of water resources engineering. The course will promote interaction with professionals working in specific areas of research in Academic Institutions, Research Labs, and Industries. Also, exposure will be provided to the audience from renowned speakers on the latest developments in Academia, Research, and Industry. This program will bring a positive transformation among the faculty members, research scholars, and participants from industries towards research work, and enable the participants to develop competence in understanding recent advances in the proposed topic of the course. In this e-STC, a total of 48 participants were enrolled from various institutions like NITs, IITs, Central Universities and private engineering colleges from various parts of India. All the participants successfully completed the one-week short term course AMI WREM-2022. In this short term course following topics are covered: Remote sensing/geospatial techniques in water resources; Uncertainty analysis in hydrology; Groundwater flow and contaminant transport modelling; Soft computing techniques in water resources; Finite Difference methods; Sediment Transport and Reservoir Operation; Basin scale hydro power development; Hydrological and Hydraulic modelling; Numerical Methods; Probabilistic and Statistical Methods; Computational Fluid Dynamics; Climate change impacts on hydrology, etc.

## Challenges and Opportunities in Microgrid 17th to 21st January 2022

The five days online Workshop on “Challenges and Opportunities in Microgrid” was conducted by Department of Electrical Engineering, National Institute of Technology Hamirpur (H.P.) from 17th to 21st January 2022. The online Workshop was coordinated by Dr. Rajan Kumar and Dr. Anil Kumar Yadav, Assistant Professor(s), Department of Electrical Engineering. The objective of the Workshop was to bring the researchers and academic country to a collective gathering for exchanging and sharing knowledge about the challenges and opportunities in Microgrid. The online Workshop was inaugurated by Patron and Chief Guest of the program Prof. (Dr.) Lalit Kumar Awasthi, Director NIT Hamirpur. Prior to his address, a brief address on Departmental achievements from Chairperson of the e-Workshop Dr. R.K. Jarial, Head, DoEE and introductory note about sessions from Convener of the program Prof. Sushil Chauhan was given to the participants.



The program witnessed a huge participation from different states of the country and abroad having total 55 participants among which 02 from industry, 11 were academicians and 42 were research scholars from different institutes/colleges/universities. Total 10 technical sessions were conducted in five days consisting of 10 eminent speakers, one for each session. The interactive technical sessions were addressed by eminent speakers from Indian Institute of Technology, National Institute of Technology, state university and industries.

## Intelligent Device Computing, Communication and Signal Processing January 10-14, 2022

Organized five-day E-Workshop on “**Intelligent Device Computing, Communication and Signal Processing**” during January 10-14, 2022. Convener Dr. Ashok Kumar, Associate Professor, Coordinators:- Dr. Sandeep Kumar Singh, & Dr. Dharmendra Singh Yadav Assistant Professor (Grade-II), Department of ECE, NIT Hamirpur, Himachal Pradesh.

## Workshop on “Smart Cities and Intelligent Systems” 3rd to 7th January, 2022

The five days online Workshop on “Smart Cities and Intelligent Systems” was conducted by Department of Electrical Engineering, National Institute of Technology Hamirpur (H.P.) from 3rd to 7th January, 2022. The online workshop was coordinated by Dr. Ram Niwash Mahia and Dr. Supriya Jaiswal, Assistant Professor(s), Department of Electrical Engineering. The objective of the e-Workshop was to bring the researchers and academic experts from reputed institutes of our country to a collective gathering for exchanging and sharing knowledge about the recent developments in the intelligent control techniques in renewable energy systems, healthcare and robotics.

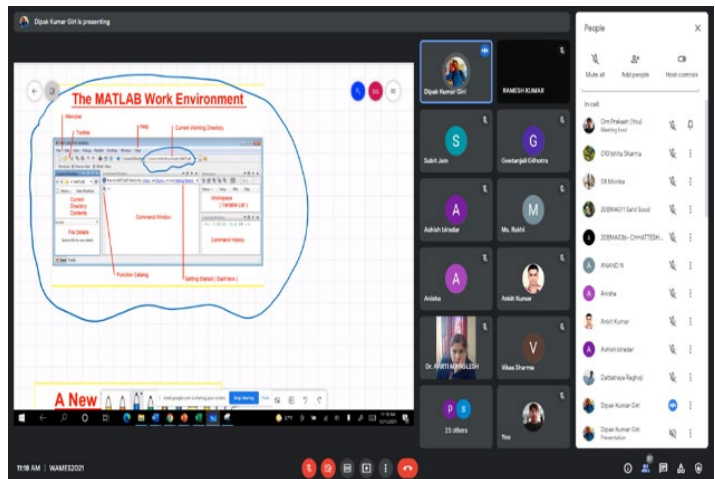
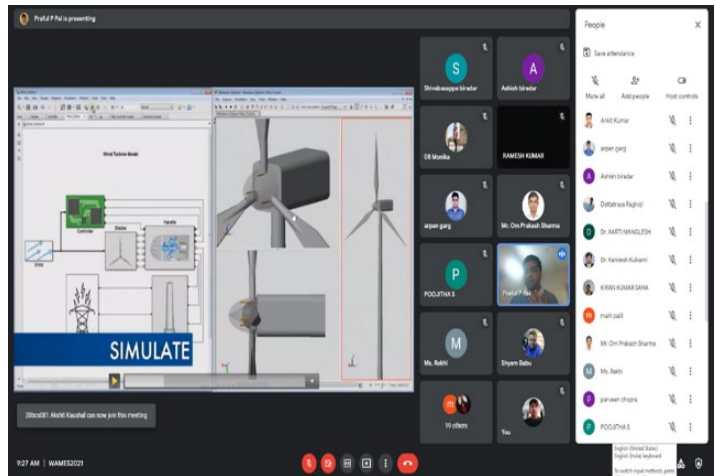


The theme of this e-Workshop fulfilled the goal of providing exposure to both conventional and recent advancements in smart cities and intelligent systems. The online workshop was inaugurated by Patron and Chief Guest Director, a brief address on Departmental achievements from Chairman of the e-Workshop Dr. R. K. Jarial, Head of Department, Department of Electrical Engineering and introductory note about sessions from Convener of the program Prof. R. N. Sharma was given to the participants. The inaugural program was graced by presence of several guests such as Registrar, Deans, HOD’s of other Departments, faculties of other disciplines and faculties and research scholars of Department of Electrical Engineering. The program witnessed a huge participation from different states of the country having total 36 participants. Total 10 technical sessions were conducted in five days consisting of 10 eminent speakers for each session. The interactive technical sessions were addressed by eminent speakers from Indian Institute of Technology, National Institute of Technology, foreign universities and industries. The valedictory program was graced by the presence of Prof. (Dr.) Lalit Kumar Awasthi, Director, NIT Hamirpur. With the closing speech of director, the positive feedbacks from several participants and the vote of thanks from the e-workshop coordinators, the program was concluded.



## Applications of MATLAB in Engineering and Sciences December 15-19, 2021

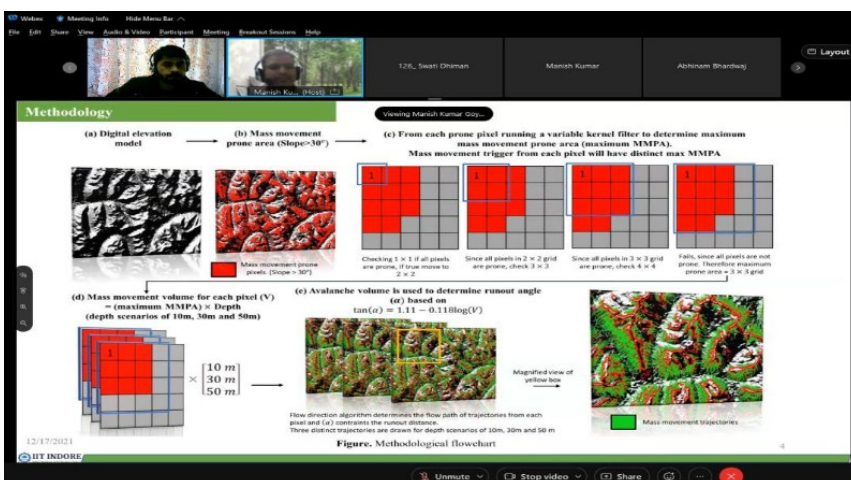
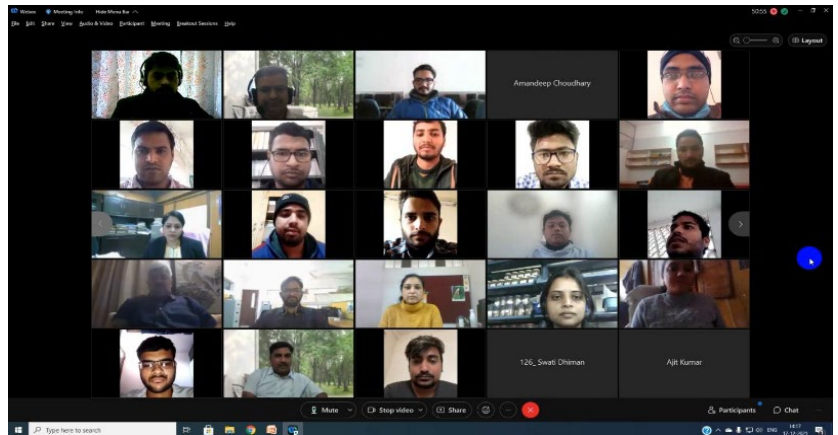
Five day e-workshop was organized by the Department of Mathematics & Scientific Computing, NIT Hamirpur during December 15-19, 2021. The topic of the e-workshop was “Applications of MATLAB in Engineering and Sciences.” The keynote speakers for the e-workshop were Dr. Praful Pai (MathWorks India), Dr. Ram Jiware (IIT Roorkee), Dr. Anand Kumar (Avni IT Infratech Ventures Ltd., Chandigarh), Dr. Hemant Jalota (Egutick India Pvt. Ltd., Greater Noida), Dr. Deepak Kumar (Acuity Knowledge Partner, Bangalore), Dr. Rajendra Kumar Ray (IIT Mandi), Dr. Krati Gupta (Acuity Knowledge Partner, Bangalore), Dr. Pushpendra Singh (NIT Hamirpur), Dr. Dipak Kumar Giri (IIT Kanpur). The chief guest for the e-workshop was Prof. Lalit Kumar Awasthi, Director NIT Hamirpur and the guest of honour was Dr. Dipak Kumar Giri (IIT Kanpur).



## National Programs

### *One day webinar on Water Management in Hilly Areas for Sustainable Development*

One day webinar on “Water Management in Hilly Areas for Sustainable Development” was jointly organized by IIT Indore, IIT Jammu & NIT Hamirpur on Friday, 17th December 2021. Water is one of the most vital elements for sustaining life, and developing societies on the planet Earth. Safe drinking water and sanitation are human rights. Water including sanitation is critical for socio-economic development, food security, and healthy ecosystems, and is vital for reducing the global burden of disease and improving the health, welfare, and productivity of populations. Climate change is increasing variability in the water cycle, thus inducing extreme weather events, reducing the predictability of water availability, decreasing water quality, and threatening sustainable development, biodiversity, and enjoyment of the human rights to safe drinking water and sanitation worldwide.

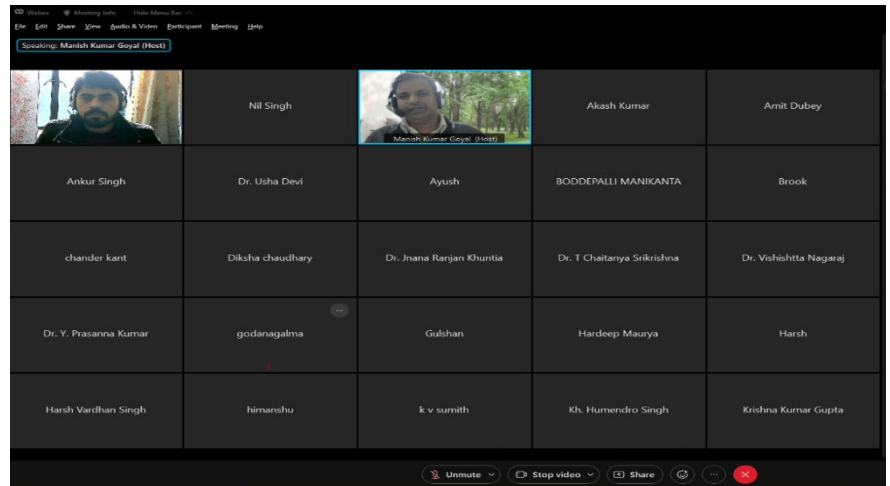


The inhabitants of hilly areas, having predominantly rural economies and high dependence on rainfed agriculture, are at risk as they are highly vulnerable to changes in seasonal climatic patterns and disturbed hydrologic cycle. The people depend on natural water-springs for drinking water supply, household activities and irrigation, but in recent times most of the springs have either become seasonal or have been extinct largely due to ecological imbalances at local and global scales. The water table in foot-hills has also lowered drastically in recent times, indicating a warning for alternative solutions by way of conserving rainfall in appropriate manner. The drying up of springs is continuously affecting the temporal & spatial availability of water in hilly regions and threatening the perennial nature of these rivers. Effective planning and management of water resources are required to meet the increased demand for water in the domestic, irrigation, and industrial sectors. The main objective of this webinar was to promote interaction with professionals working in Academic Institutions, Research Labs, and Industries specifically in the hilly regions of India.

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## One-day webinar on “Sustainable Water Resources Management in the Himalayan Region”

A one-day webinar on “Sustainable Water Resources Management in the Himalayan Region” was jointly organized by IIT Jammu, IIT Indore and NIT Hamirpur on Wednesday, 29th December 2021. Availability of freshwater is essential for human survival, developing societies and for maintenance of ecosystem on land. It plays a vital role in development, particularly in Indian conditions with large areas under arid and semiarid conditions, where water availability is directly linked to food production for hundreds of millions. Clean water is required for drinking and personal hygiene; irrigation is needed for agricultural production; dams are required for hydropower generation; inland waterways are required for transportation of goods/people and freshwaters are important for recreation and habitats. The Himalaya is known as "Water Tower of Asia" as perennial source of fresh water. Hence, it plays a critical role in the major rivers of Asia.



The Hindu Kush Himalayan (HKH) region heavily depends on water resources for socio-economic development, irrigation, food security, hydropower, sanitation, and industry, as well as for the functioning of many important healthy ecosystem services. Rising water consumption, rapidly growing population, is causing increasing pressure on the available water resources in the fragile Himalayan region. This situation will worsen in future unless water supplies are augmented based on integrated long-term water resource management. Climate change is increasing variability in the water cycle, thus inducing extreme weather events, reducing the predictability of water availability, decreasing water quality, and threatening sustainable development, biodiversity, and enjoyment of the human rights to safe drinking water and sanitation worldwide. Understanding the characteristics of water is crucial for sustainable water management. Successful management of water resources is dependent on an ability to balance the natural availability of water with the pressures exerted by water-users. Effective planning and management of water resources are required to meet the increased demand for water in the domestic, irrigation, and industrial sectors. The main objective of this webinar was to promote interaction with professionals working in Academic Institutions, Government Organizations, Research Labs, and Industries specifically in the Himalayan regions of India.

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## Book Chapters Published

Sr. No	Title of the Chapter	Name (s) of author(s) of chapter	Title of Book	Name(s) of Editor(s)	Year of Publication	Publisher
1	Data Caching at Fog Nodes Under IoT Networks: Review of Machine Learning Approaches	Riya, Nitin Gupta and Qin Xin,	Deep Learning for IoT Infrastructure	Uttam Ghosh, USA Al Sakib Khan Pathan, Bangladesh	Sep-21	CRC Press, USA
2	Employing HEC-RESSIM 3.1 for Reservoir Operation and Decision Making	Abhishish Chandel, Vijay Shankar and Sumit Jaswal	HYDROSTATITICS	Dr Valter Silva & Dr Joao Cardoso	2022	INTEC-OPEN (Web of Sciences)
3	Effect of Liquefaction on Behavior of Strip Footings on Sands in Roorkee	Singh Manendra., Maheshwari B.K.	Dynamics of Soil and Modelling of Geotechnical Problems. Lecture Notes in Civil Engineering, vol 186	Satyanarayana Reddy C.N.V., Krishna A.M., Satyam N.	2022	Springer, Singapore
4	New Approach to Evolve Soil Water Retention Curve in Lower Kosi Basin, India	Ray Singh Meena and Ramakar Jha	Hydrological Modeling	Ramakar Jha, V. P. Singh, Vivekanand Singh, L. B. Roy, Roshni Thendiyath	2022	Springer Natures
5	Generation Scheduling considering Emissions in Cost-based Unit Commitment Problem	Vineet Kumar, R. Naresh, Veena Sharma and V. Kumar	Renewable Energy towards Smart Grid: Select Proceedings of SGESC 2021: Lecture Notes in Electrical Engineering		January, 2022	
6	State of the Art on Optimization and Metaheuristic Algorithms	Vineet Kumar, R. Naresh, Veena Sharma and Vineet Kumar	Handbook of Intelligent Computing and Optimization for Sustainable Development		February, 2022	WILEY-SCRIVENER]
7	Energy Efficient SRAM Design Using FinFETs and Potential Alteration Topology Schemes	Samarth Agarwal and Rajeevan Chandel	Artificial Intelligence Driven Circuits and Systems, Lecture Notes in Electrical Engineering (LNEE), vol. 811, pp. 65-75. <a href="https://doi.org/10.1007/978-981-16-6940-8_6">https://doi.org/10.1007/978-981-16-6940-8_6</a> .	Mishra B., Mathew J., Patra P. (Eds).	2022	Springer, Singapore



## Significant outreach

S. No.	Name of faculty	Name of organisation
1.	Dr. Mohit (DoCSE) delivered Talk/Lecture "Introduction to Deep Learning and its applications to NLP" in Five days Online Short Term Course on "Data Science & its Applications" organized by Department of Computer Science & Engineering, IIIT Bhagalpur	5 days (13th-17th December 2021)
2.	Dr. Mohit (DoCSE) delivered Talk/Lecture "Machine Learning Fundamentals and its application to NLP tasks" organized by Department of Computer Science and Engineering, Lakireddy Bali Reddy College of Engineering (Autonomous) Mylavaram, Krishna (Dist), Andhra Pradesh	1 day (27th November 2021)
3.	Dr. Mohit (DoCSE) delivered Talk/Lecture "Machine Learning Fundamentals and its application to NLP tasks" organized by ABESIT College of Engineering, Ghaziabad, Uttar Pradesh	1 day (27th November 2021)
4.	Dr. Nitin Gupta Served as a Member of National Advisory Committee of International Conference in Communication, Devices and Networking (ICCDN 2021), Sikkim Manipal Institute of Technology Rangpo, India.	December 15-16, 2021
5.	Dr. Nitin Gupta (DoCSE) served as a Publicity Chair WS-24: IEEE IoST-5G&B: 2nd Workshop on Recent Trends of Internet of Softwarized Things - 5G & B in IEEE Globecom, Madrid, Spain.	Dec 7, 2021,
6.	Dr. Nitin Gupta (DoCSE) served as a Publicity Chair of IEEE International Conference on Computer, Information, and Telecommunication Systems, IEEE CITS 2021, Istanbul, Turkey.	Nov 11-13, 2021
7.	Dr. (Mrs.) Kamlesh Dutta (DoCSE) attended AICTE workshop for designing the Computer Science & Engineering curriculum	26th March 2022.
8.	CBHE Virtual Fair 2021	Oct. 27, 2021
9.	Principles of Space Making	Feb 12, 2022
10.	Dr. Mohd. Adil, DoMS, contributed as a resource person in 5-Days ATAL Online Elementary FDP entitled "Structural Equation Modeling and Artificial Neural Network in Management Research"	12-09-2021
11.	Dr. Mohd. Adil, DoMS, contributed as a resource person in 5-Days ATAL Online Advanced FDP entitled "Structural Equation Modeling and Artificial Neural Network in Management Research"	14/12/2021
12.	Dr. Mohd. Adil, DoMS, contributed as a resource person in 5-Days ATAL Online Advanced FDP entitled "Structural Equation Modeling and Artificial Neural Network in Management Research"	16/12/2021
13.	Expert Lecture Delivered Five Days International Faculty Development Programme (Online) on "Advancement of Technology in Civil Engineering" organized by The Department of Civil Engineering, Anand International College of Engineering, Jaipur	28th Feb 2022 to 5th March 2022.
14.	Expert Lecture on . IT in Management: Application of numerical and soft computing techniques	Refresher Course on Commerce and Business Management, 9th – 21st November 2021 at UGC Human Resource Development Centre HPU Shimla.



15.	Expert Lecture on Liquefaction and its mitigation by ground improvement methods by Dr. Manendra Singh	Earthquake Risk Management” from 03-07, January, 2022 at NITTTR, Chandigarh
16.	Expert talk on Sustainable Strategies for Water Resources Management by Dr. Ray Singh Meena	One-day Webinar jointly organized by IIT Indore, IIT Jammu, and NIT Hamirpur on "Water Management in Hilly Areas for Sustainable Development" on 17 December 2021
17.	Expert talk delivered by Dr. Rajan Kumar, Assistant Professor, Department of Electrical Engineering in Faculty Development Program on “Sustainable Transport Sources for Future Mobility Application,” organized by Maulana Azad National Institute of Technology Bhopal, India	22-26 November 2021
18.	Expert talk delivered by Dr. Rajan Kumar, Assistant Professor, Department of Electrical Engineering in Short Term Course on “Grid Modernization: Opportunities and Challenges,” organized by National Institute of Technology Kurukshetra, India	20-24 December 2021
19.	Expert talk delivered by Dr. Rajan Kumar, Assistant Professor, Department of Electrical Engineering in Induction Programme on “Developments and Applications in Renewable Energy in Power System,” organized by Chhatrapati Shivaji Institute of Technology Durg, India	02-08 March 2022
20.	Chaired a session in Indian Conference on Antennas and Propagation (InCAP2021) held at MNIT Jaipur	December 13-16, 2021.
21.	Delivered an expert lecture on “Localized WSN an Enabling Technology for IoT”, at one-week FDP "Advancement in Wireless Communication Technologies, Networking and Applications (AWCTNA-22),organized by the Department of Electronics and Communication Engineering, CVR College of Engineering, Hyderabad	March 21-25,2022.
22.	Evaluated and examined the PhD thesis titled “Congestion Control in Sensor Network using Routing Techniques”, as external expert at Visvesvaraya Technological University“Jnana Sangama”, Belagavi 5900 018.	
23.	Evaluated and examined the PhD thesis titled “A Security Framework for Storage Optimization of IoT Applications using Secured Hash Algorithm”, as external expert at Chitkara University, Chandigarh-Patiala National Highway, Rajpura (Patiala) Punjab-140401	
24.	Reviewed paper, “Robustness Enhanced Sensor Assisted Monte Carlo Localization for Wireless Sensor Networks and the Internet of Things”, for IEEE Access.	
25.	Reviewed paper, “Improved Beetle Antennae Algorithm Based on Localization for Jamming Attack in Wireless Sensor Network”, for IEEE Access.	
26.	Reviewed paper, “Robust Localization based on Mixed-Norm Minimization Criterion under LOS/NLOS Mixture Conditions”, for IEEE Access.	
27.	Reviewed paper, “Time-Space Dynamic Incentives Topology Equilibrium Control for Mechanical Vibration Wireless Sensor Networks”, for IEEE Transactions on Industrial Informatics.	



28.	Prof. Rajeevan Chandel delivered a Keynote address on 4th Feb 2022 on the topic “Electronics & Communication Engineering in Industry 4.0,” in the International Conference on Robotics, Automation & Communication Engineering for Industry 4.0 (ICRACEI4.0) organized by Manav Rachna University, Faridabad, Haryana.	February 4th & 5th, 2022
29.	Prof. Rajeevan Chandel delivered a Keynote Lecture on “Research Opportunities in VLSI Design,” on 11th Jan 2022 in the five-day Online Workshop on “Intelligent Device Computing, /Communication and Signal Processing”, organized by DoECE, NIT Hamirpur HP.	January 10-14, 2022
30.	Prof. Rajeevan Chandel attended International Colloquium on Technology Readiness for High Volume Semiconductor Chip Manufacturing (Fab) ICTFAB-2021, organized by IIT Mandi, HP	15-16 Nov, 2021
31.	Prof. Rajeevan Chandel attended 6th Virtual Awareness Programme on Intellectual Property Rights, jointly organized by PHD Chamber of Commerce and Industry, Office of CG of Patents, Design & Trademarks, Ministry of Commerce and Industry GoI, and supported by NIT Hamirpur HP	22 Dec, 2021
32.	Prof. Rajeevan Chandel attended International Symposium on History & Future of Transistor (75 Years of Invention of the Transistor), The National Academy of Sciences India (NASI)-Delhi, Chapter, IEEE EDS and Deen Dayal Upadhyaya College, Delhi	23rd Dec to 31st Dec 2021
33.	Prof. Rajeevan Chandel attended e-STC on Recent Trends in Networks and Communication: Theory & Challenges (RTNC-2021), organized by DoCSE, NIT Hamirpur in collaboration with IEEE Communication Society (IEEEComSoc), Delhi Section.	1-6 Dec, 2021
34.	Prof. Rajeevan Chandel, DoE&CE NIT Hamirpur HP, attended Webinar on Education 4.0: Role of AI in Transforming Academia, organized by BVICAM, New Delhi, sponsored by IEEE Delhi Section, IIPC, AICTE.	15 January, 2022
35.	Prof. Rajeevan Chandel, DoE&CE, NIT Hamirpur HP attended Webinar on Machine Learning Algorithms and Behaviour of Data, organized by BVICAM, New Delhi, sponsored by IEEE Delhi Section, IIPC, AICTE.	04 March, 2022
36.	Mahesh Angira participated in INUP - i2i Familiarization Workshop on Nanofabrication Technologies, held at IIT Bombay during January 19-21, 2022	
37.	Mahesh Angira attended International Colloquium on Technology Readiness for High Volume Semiconductor Chip Manufacturing (Fab) ICTFAB-2021, organized by IIT Mandi, HP	Nov. 15-16, 2021.
38.	Mahesh Angira conducted the interview of Project Fellow at CSIR-CEERI, Pilani on 11.02.2022 as a member of selection.	
39.	Chaired Technical Session in 2nd International conference on Machine Vision and Augmented Intelligence Conference held at NIT Jamshedpur	March 4-6, 2022
40.	TPC Member of MAI 2022	March 4-6, 2022
41.	Delivered talk on Artificial Intelligence towards Automation in FDP on Artificial Intelligence, Robotics and Automation	School of Automation Bansathali Vidhyapith, Rajasthan, March 9-14, 2022



## Awards

S. No.	Name of faculty	Name of organisation	Date	Award	Other details if any
1	Jai Prakash	Stanford University, USA, and published by Elsevier	19-Oct-21	listed in top 2% scientists worldwide	This list has been compiled after extensive research by Stanford University, USA, and published by Elsevier.
2	Dr Vijay Shankar	The Indian Society for Hydraulics	December, 2021	Jalvigyan Purushkar 2021	For best paper published
3	Dr. Manendra Singh	Indian Geotechnical Society	December, 2021	Springer Best paper award for the paper	Springer Best paper award for the paper titled "Static and Dynamic Study on the Performance of Modified Stone-Column in Ahmedabad Soil"
4	Prof. Rajeevan Chandel	Manav Rachna University, Faridabad, Haryana.	4th & 5th Feb 2022	Letter of Appreciation from Prof. I.K. Bhat, Hon'ble Vice Chancellor MRU (Former Director, NIT Hamirpur)	For delivering an Online Keynote address on Electronics and Communication in Industry 4.0 in the International Conference on Robotics, Automation & Communication for Industry 4.0

## Training and Placement

S. No.	Branch	Eligible Candidates	Placed	% Placement	Total Jobs Offered	% Jobs offered to NITH	Max CTC (in lakhs)
1	Computer Science & Engg.	94	90	95.74%	135	143.62%	112
2	Computer Science & Engg. Dual Degree	54	52	96.30%	68	125.93%	151
3	Electronics & Comm. Engg.	79	74	93.67%	110	139.24%	19.4
4	Electronics & Comm. Engg. Dual Degree	58	49	84.48%	76	131.03%	16.6
5	Electrical Engg.	84	66	78.57%	70	83.33%	16
6	Mechanical Engg.	90	72	80.00%	79	87.78%	14.5
7	Civil Engg.	83	41	49.40%	42	50.60%	9.9
8	Chemical Engg.	53	34	64.15%	37	69.81%	10
9	Architecture	33	0	0.00%	0	0.00%	0
10	M.Tech (All)	240	71	34.00%	85	40.70%	22.5
11	MBA	16	7	43.75%	8	5.00%	8.29





*You are not here merely to make a living. You are here in order to enable the world to live more amply, with greater vision, with a finer spirit of hope and achievement. You are here to enrich the world, and you impoverish yourself if you forget the errand.*

*~ Woodrow Wilson*

**Dr. Puneet Sharma,**  
*Faculty Incharge*

**Aryan Sehgal,**  
*Editor in Chief*

**Apoorva Kaushal,**  
*Head of Design*