

Name of Institute: Visvesvaraya National Institute of Technology, Nagpur

Institute ID: IR-E-U-0334

R & D Projects

Sr.no	Title of Project	Funding Agency	Total Sponsored Amount (Rs.In Lakhs)
1	Smart Structure with failure Alarm system	NPIU, Govt of India Centre of Excellence, VNIT Nagpur,22 July 2014	
2	Capacity Building for Climate Change Adaptation and Mitigation with a Special Focus on Sustainable Habitat and Risk	DST-CCP SPLICE Department of Science and Technology	115.8
3	Evaluation of Toughcrete Steel Fibre – Concrete Composites	PDPL (Industry)	2.3
4	Optimization of module mounting structure for solar power using different structural configurations	Head, Mahindra EPC Services Pvt Ltd, Mahindra Tower, Dr. G. M. Bhosale Marg, P K Kurne Chowk, Worli, Mumbai	2.44
5	Indigenous Design and Development of High Strain Rate Characterization Machine for Characterization of Soft Materials	SERB (DST) 27.06.2017	42.35
6	Numerical simulation of Dynamics of Blast hardened structure and crew response against blast loads using LS-Dyna	DEBEL (DRDO) 16.10.2017	19.92
7	Conversion of Bridge (pipe / vented Culverts) to Bridge cum Bandhara	PWD Nagpur May 2018	18.6
8	Experimental and Analytical Evaluation of Precast Faced Wall-panels	M/s Paul Bricks,Tuskrete Steel Fibers,Nagpur 25.11.2017	2.5
9	Capacity Building for ClimateChange Adaptation and Mitigationwith Special Focus on SustainableHabitat and Risk Management - Dr. RajashreeKotharkar***	Human Capacity building program of DST Climate Change Programme, New Delhi(DST-CCP)	115.88
10	Evolving strategies for mitigatingurban heat island in Nagpur using'Local Climate Zones' and HumanThermal Stress - Dr. RajashreeKotharkar***	Department of Science andTechnology, Science andEngineering Research Board (DST– SERB)	29.7
11	Socio-Ecological Resilience as Sustainable Development Strategies under the context of Emerging Disaster Risk for Rural Settlements in different Climatic Zones of India - Dr. Sameer Deshkar***	START International Inc. USA	12.05
12	Acoustic Enhancement/ Optimization of a Typical Lecture Hall through Architectural interventions and Signal Processing in Hot and Dry Climate. - Late. Dr. AlpanaDongre***	Centre of Excellence, Combedded Systems: Hybridization on of Communications and Embedded Systems under NPIU (TEQIP -1.2.1), VNIT, Nagpur	9.87
13	Development of Controlled Shape and Size Metal Oxides Nanoparticles, Synthesis of Nanofluids and Application in Heat Exchanger	DST	22
14	Development of High Performance Heat Transfer Nanofluids Using Carbon Nanotubes (SWCNT & MWCNT'S) Nanoparticles and Its Applications in Double Pipe Heat Exchanger	DST	5.5

15	Experimental Investigations of prototype designed Critical Heat Flux (CHF) Enhancement of High Performance Heat Transfer Nanofluids using SWCNT & MWCNT'S based Nanoparticles	SERB, DST	50
16	Development of starch based polyurethane nano-coatings for packaging application by sonochemical approach	MHRD, Republic of Tunitia & DST, Govt. of India	15
18	Process Development for Production of Janus Nanoparticles for Selected Catalytic Reactions	DST	23
19	Model based optimal design and Fabrication of coin cells using spent lithium ion battery	SERB-DST	33.64
20	Development of prototype lantern powered by spent laptop batteries	SYST-DST	12.01
21	Downstream processing of erythromycin using a new phase separation method	DST	24.13
22	Process Development of Potato Biorefinery, (DST/TDT/TDP-02/2017)	DST	66.91
23	Investigation of selective CO ₂ capture by graphene-carbon nanotube hybrid nanostructures using molecular dynamics simulations	SERB	23.65
25	'Nanoparticles of different shapes conjugated with drugs to achieve enhanced therapeutic efficacy in treatment of cancer	DST-SERB Extra Mural Research (Govt. of India)	27.66
27	Separation of water form spent acid	ordnance factory bhandara	11.73
28	Development of simple and cost effective process for recovery of proteins from dairy waste	DST-SEED	15.98
29	Extractive fermentation with surfactants to enhance butanol production	DBT	29.17
30	Development of TiO ₂ Quantum dots and their Composites for Photocatalytic Application	DST SERB	46
31	"Design and synthesis of luminescent lanthanide hybrid material for diverse application"	DST (SERB) 18/01/2017	19
32	Development of multifunctional elastomeric composites for desired material performance	Indian Rubber Manufacturers Research Association (Affiliated to Min. of Commerce and Industry, GOI), (28-06-2017)	10.025
33	Synthesis, characterization of mixed ferrites and its applications	UGC-DAE-CSR (7-02-2017)	4.05
34	Synthesis, characterization of mixed ferrites	UGC-DAE-CSR (7-02-2017)	1.35
35	Biocatalysis for the development of sustainable organic synthesis	DST-SERB 8/1/2013	32.71
36	Halogen-bonded supramolecules showing liquid crystalline properties	Science and Engineering Research Board (SERB), Nov 2016	45.6
37	Deep Desulfurization of liquid fuels through microbe assisted metal modified adsorbents	DST-SERB on 7 th October 2017	34.1
38	Development of Sustainable Catalyst System for the Installation of CO ₂ as a C-1 Feed Stock: Synthesis of Value Added Compounds	DST-SERB (August, 2017)	45.32
39	Efficient Carbon dioxide reduction with Biomimetically Functionalized Polyoxometalates	DST-SERB Date of Award: 23.10.2017	49.86
40	Development of Tunable Chemosensors for Metal Ions Based on the Castagnoli-Cushman Multicomponent Chemistry	Indo-Russian Collaborative DST September, 2018	27.27

41	Modelling of Permeability In Multi-Layered Soil System using Shear and Compression Wave Velocities at Different Confining Stress Dr. A .Patil	SERB	22.61
42	Site classification scheme and amplification factors for Indian seismic design code Dr. Shrabony Adhikary	SERB-DST	31.32
43	Nano Processing of Industrial Rejects for Use as Additives in Mix-designs for Improved Pozzolanic Reaction Efficiency Dr. Mangesh Madhurwar	Ministry of Mines, GOI	12.075
44	Predictive Approach for Early Detection of Contamination Zone in an Intermittent and Continuous Water Supply System and its health impact Dr. Rajesh Gupta	Department of Science and Technology, DST/TM/WTI/2K16/171(G) dated 30.12.2016	77.56
46	National Air Monitoring Programme (NAMP) Dr. Dilip Lataye	Maharashtra Pollution Control Board (MPCB)	7.05
48	State Air Monitoring Programme (SAMP)		7.05
53	National Air Monitoring Programme (NAMP) Dr. V.A.Mhaisalkar, Dr. Dilip H. Lataye	Maharashtra Pollution Control Board (MPCB)	7.05
55	State Air Monitoring Programme (SAMP) V.A.Mhaisalkar, Dr. Dilip H. Lataye	-do-	7.05
60	Multi-purpose Multi-reservoir operation and planning using JAYA algorithm for equitable water distribution within Upper Godavari basin D. Ashwini B. Mirajkar	SERB-ECR	15.939
61	Big Video Data Analytics for Surveillance and Security of Bank ATMs in a Smart City	SERB (DST)	28
62	Information Security Education and Awareness Project Phase - II	Ministry of Communications and Information Technology (MCIT), New Delhi	190
64	Genome-wide identification of cis-regulatory elements and development of G-logo tool for genome logo representation	Meity, Young Scientist Faculty Research Fellowship Award, Gol	370
67	Design and Development of Underwater Sensor Networks using Magnetic Induction based Communications Dr. Vinay Kumar	SERB, DST, Govt. of India	25
71	To develop a testbed based on Magnetic Induction (MI) communications for agricultural soil condition monitoring (water concentration, minerals, and toxic chemicals) Dr. Vinay Kumar	MEITY, Govt. of India	40.68
74	Development and Analysis of Spectrally Efficient Communication System for Future Generation IoT Applications Dr. Prabhat Kumar Sharma	Ministry of Electronics & Information Technology	
75	Implementation and Analysis of Bi-directional Visible Light Communication Systems with Associated Back-End Technologies Dr. Prabhat Kumar Sharma	Ministry of Electronics & Information Technology	
77	Automated video surveillance V. Satpute	MeitY	37
78	Application of Deep Learning on dual mode Photoacoustic and Ultrasound images for weekly supervised computer aided cancer diagnosis. S. Sinha	Ministry of Electronics & IT, Govt. of India	37
83	Development of a customized dual mode in vivo Photoacoustic and Ultrasound Imaging system for early detection of breast cancer. S. Sinha	SERB, DST, Govt. of India	

84	Establishment of COE of COMBEDDED systems: Hybridization of Communication and Embedded systems under TEQIP 1.2.1 A. Kothari	NPIU	500
85	Interference mitigation in (BAN) Body Area Network through spectrum sensing (A.Kothari)	Seed grant CoE 4- e , CoE VNIT	6.3
87	Acoustic Enhancement/ optimizations of A typical Lecture Hall Through Architectural interventions and signal processing in hot & dry climate (A.Kothari)	Seed grant CoE 4- e ,	9.87
88	Smart structures with failure alarm & adaptive control system (A.Kothari)	CoE VNIT	15.01
89	Design, Development & Fabrication of humanoid robot with adaptive gripping capabilities (A.Kothari)	Seed grant CoE 4- e ,	10.08
90	Development of camera based sensor for motion detection and its application for energy saving (A.Kothari)	CoE VNIT	12.25
91	Design and Development of an Experimental Test Bench Setup of Electric Vehicle	DST-SERB ECR	35.88
92	Development of contactless energy exchange system for Autonomous Electric Vehicles	DST-SERB ECR	37.45
93	Six-phase matrix converter for traction drives	SERB-DST	42
94	Numerical methods for solving multi-parameter singularly perturbed boundary value problems	NBHM, (DAE)	12.41
96	Newton type iterative regularization methods for nonlinear ill-posed operator equations	NBHM, (DAE)	13.18
98	Studies on the flows of two immiscible incompressible micropolar and viscous fluids	NBHM (DAE)	9.565
101	Numerical Methods for Hyperbolic Conservation Laws	NBHM (DAE)	15.7
102	Numerical methods for a class of singular two-point boundary value problems	DST, SERB	16.84
103	Design, analysis and implementation of numerical methods for doubly singular boundary value problems	NBHM (DAE)	14.03
104	Numerical methods for solving fractional differential equations arising in nuclear reactor dynamics	BRNS (DAE)	12.84
105	Existence and uniqueness problems arise in operator equations and inclusions	NBHM (DAE)	1.62
106	Study on local cohomology by using theory of D-modules	DST (SERB)	6.04
107	Approximation by generalized Kantorovich type sampling type series	DST, SERB	17
108	Smart Foundary 2020	DST	250
109	Biomedical Engineering and Technology centre Incubation	DST/RGSTC	350
110	Performance Analysis and Optimization of recoil mechanism of 7.62 mm assault rifle	Ministry of Defence	24.0787
111	Design, Analysis and Optimization of 15 mm Artillery Gun	Ministry of Defence	24.756
112	Development of Digital Dental Restoration	DST	41.5
113	Biomechanical behaviour of Mandibular overdenture retained by one or two standard sized or mini implants: 3D Finite Element Analysis	International Medical University, Malaysia	1.5

114	Application of rate, state, temperature and pore pressure friction (RSTPF) model for rock slope stability and failure hazard assessment	NRDMS-DST	13.5
115	Online Monitoring and Characterization of Distorsion in Multi Layer Laser Cladding Process	DST-SERB	37.19
116	Development of Fluid - Structure Interaction (FSI) Solver for Cardiovascular Disease: An Aneurysm	DST-SERB	26.19
117	Development of Ni based composite coatings using electroless plating method for high temperature tribological applications	DST-SERB	35.54
118	Response of hemispherical sandwich shell structures subjected to projectile impact	DST-SERB	21.97
119	Design and Fabrication of Thin-film Sensor for Hypersonic flows	DST-SERB	36
120	Technical & Feasibility study of overburden rock of Dongri Buzurg & Kandri Mine for consolidated stowing in underground mines-Field trials Dr I L Muthreja, Dr R R Yerpude, Dr A Ghare	MOIL Ltd	
121	Design and Analysis on weld joints of Aerofoil in jet blast defector	Anand Mines Tools Pvt. Ltd. Nagpur	4.08
122	Assessment of Weld Interface Creep Cavitation of Ferritic/austenitic Dissimilar Weld Joint of	UGC-DAE-CSR	15
123	Ferritic Modified 9Cr-1Mo and Austenitic 316 LN Steels		
124	Effect of Texture on LCF Behavior of Ti-64 Material in Gas Turbine Fan Blade	GTRE	9.8
125	Large scale synthesis of WO _{3-x} nanowires for chemiresistive gas sensors	SERB	37
126	Generation of Haigh Diagram for alloy 617M for the Indian Advanced Ultra Supercritical Power Plant	AUSC- Mission Directorate	414.11
127	Structural developments during deformation and annealing in two phase materials	SERB	16.85
128	Structural developments during deformation and annealing in titanium alloys	SERB	16.96
129	Developing downstream applications of strip cast aluminium alloys	Ministry of Mines	18
130	Ultrasound Assited Synthesis of Al-MgAl ₂ O ₄ insitu Composites by Oxides Reduction	SERB	42.34
131	Flexible solid-state supercapacitor device	DST-TMD	64.95
132	Core-shell Nanowire/Nanorods based device grade solid-state solar cell.	DST-SERB (EMR)	47.01
133	Development of lithium disilicate based nano glass ceramics for armour applications	DRDO	35.82
134	Fabrication of rare earth doped ceria electrolyte based prototype SOFC for intermediate temperature range.	DST	30.8

135	Fabrication of performance enhanced solid oxide fuel cell based on strained Gd doped Ceria electrolyte	DST	37.4
136	Investigations on $\text{Cu}_2\text{ZnSnSe}_4$ thin films leading to the development of heterojunction solar cells	UGC-DAE CSR:	8.45
137	Development of P3HT:PCBM solar cell containing Zn-Al & Zn-Fe hydrotalcite nanoparticles in PEDOT:PSS layer to enhance the efficiency.	DST-SERB	10.2
138	Chip to system design special Manpower development program .(Ongoing)	Ministry Of Communication and Information Technology	150
139	Exploration of Micro-cantilever platform for Agricultural Applications” .(Ongoing)	Department of science and Technology	60
140	Design and Fabrication of instrument for microfluidic studies.(Ongoing)	Aeronautical Development Agency	
141	Establishment of National MEMS design Center (Ongoing	Aeronautical Development Agency	
142	Design and Development of a Pico-ampere Source and Meter (Ongoing)	Board of Research in Nuclear Science (BRNS)	25
143	Rajiv Gandhi Science and Technology Commission Government of Maharashtra (RGSTC)	Center for Innovation, (Incubation Centre) VNIT. Nagpur (Ongoing)	227

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