

R AND D INFORMATION 2020-21

NEW EXTRAMURAL GRANTS (2020-21)

Sl.No.	Name of the Project	Project Leader	Project Code	Funding Agency	Period From	Period To	Funds Received During the Year (Amount in Lakhs)
1	Quasi-optimality of adaptive finite element methods for elliptic optimal control problems	DR. ASHA KISAN DOND	SRG/2020/001027	SERB	23.12.2020	22.12.2022	7.94
2	Inspire Faculty Fellowship	DR. FAZALURAHMAN KUTTIASSERY	DST-INSPIRE FACULTY FELLOWSHIP/BATCH-16/2020-DST/INSPIRE/04/2019/002362	DST	04.01.2021	03.01.2026	22.00
3	Ramanujan Fellowship	DR. JOYDEB MANDAL	RJF/2020/000103	SERB	08.03.2021	07.03.2026	Fund Received in 2021-22
4	Realizing distributed quantum computing with silicon-based spin qubits	DR. MADHU THALAKULAM	DST/DST/ICPS/QuST/Theme-4/2019/General	DST	24.02.2020	23.02.2023	900.82
5	Inspire Faculty Fellowship	DR. MATHEW ARUN THOMAS	DST-INSPIRE FACULTY FELLOWSHIP/BATCH-16/2020-DST/INSPIRE/04/2019/002507	DST	20.10.2020	19.10.2025	22.00
6	HPC technologies and large-scale simulation of the electromechanics for the heart function	DR. NAGAJIAH CHAMAKURI	DST/NSM/R&D_HPC_Applications/2021/03.28	DST	23.03.2021	22.03.2023	Fund Received in 2021-22
7	Stereoselective Total Synthesis of Aisan Based Diterpenoids Antiquipretes	DR. RAJENDAR GORETI	CRG/2020/003737	SERB	18.12.2020	17.12.2023	22.57
8	Structure, function and molecular mechanism of transcription regulators in Mycobacterium spp.	DR. RAMANATHAN NATESH	MHRD-STARS/APR2019/BS/729/FS	MHRD	15.05.2020	04.05.2023	19.48
9	Olfactory cues used in stingless bee foraging-recruitment behavior: behavioral and neuronal perspectives	DR. RESHMA BASAK	PDF/2020/000943	SERB	04.02.2021	03.02.2023	10.13
10	Development of next generation all-solid-state sodium-sulfur batteries for lighting and consumer electronic applications	DR. SHRUTI SURIYAKUMAR	PDF/2020/000209	SERB	12.01.2021	11.01.2023	10.13
11	Inspire Faculty Fellowship	DR. SOORAJ K	DST-INSPIRE FACULTY FELLOWSHIP/BATCH-16/2020-DST/INSPIRE/04/2019/001843	DST	13.10.2020	12.10.2025	22.00
12	Design of chiral self-sorting and stimuli-responsive dynamic chiral cages and host-guest chemistry	DR. SOUMEN DE	SRG/2020/001486	SERB	23.12.2020	22.12.2022	16.51
13	Utilization of Oleophilic Atomically Precise Metal Nanocluster in Aqueous Medium Through Host-Guest Self-Assembly Approach	DR. SOURAV BISWAS	PDF/2020/001085	SERB	22.12.2020	21.12.2025	10.13
14	Development and Evaluation of diagnostics and Candidate VACacines for emerging SARS-Coronavirus-2 (Dec-VAC-SARS)	DR. STALIN RAJ VICTOR	IPA/2020/000070	SERB	23.12.2020	22.12.2023	58.71
15	ENDFLU - Evaluation of Rationally Designed Influenza Vaccines	DR. STALIN RAJ VICTOR	BT/IN/EU-INF/15/RV/19-20	DBT	31.12.2020	30.12.2025	35.02
16	Modelling, Analysis and Prediction for SARS-CoV-2 Infections	DR. UTPAL MANNA	MSC/2020/000029	SERB	30.06.2020	29.06.2021	4.30
17	Schurs Exponent Conjecture	DR. VIJI Z THOMAS	MTR/2020/000483	SERB	10.02.2021	09.02.2024	2.20
18	Open quantum systems - Non Markovian dynamics and Not completely Positive Maps	PROF. ANIL SHAJI	DST/DST/ICPS/QuST/Theme-4/2019/General	DST	24.02.2020	23.02.2023	122.28
19	Organisation of Summer Schools	PROF. ANIL SHAJI	DST/DST/ICPS/QuST/Theme-4/2019/General	DST	24.02.2020	23.02.2023	20.00
20	Development of porous titania supported Lithium Hydroxide for efficient capture of carbon-di-oxide	PROF. K M SURESHAN	ISRO/RES.3/861/20-21	ISRO	16.11.2020	15.11.2022	3.89
21	Understanding the regulation of kinetochore protein phosphorylation for the activation of spindle assembly check-point	PROF. TAPAS KUMAR MANNA	CRG/2020/002452	SERB	11.03.2021	10.03.2024	22.49

ONGOING EXTRAMURAL GRANTS (2020-21)

Sr.No.	Name of the Project	Project Leader	Project Code	Funding Agency	Period From	Period To	Funds Received During the Year (Amount in Lakhs)	Remarks
1	Exploring the active sites of nitrogen and boron containing/doped materials-N ₂ -C-B type active sites for electrocatalytic 4-electron oxygen reduction reaction	DR. A MUTHUKRISHNAN	DST/TMD/HFC/2K18/24(C) & (G)	DST	17.09.2019	16.09.2022	-	
2	Al(VI/III) Lewis Pairs for the Activation of Inert Chemical Bonds	DR. AJAY VENUGOPAL	CRG/2019/0065040	SERB	01.01.2020	31.12.2022	5.00	
3	Electrophilic Aluminum Compounds for Catalytic CO ₂ Hydroxylation	DR. AJAY VENUGOPAL	MHRD-STARS/APR2019/CS/250FS	MHRD	31.12.2019	30.12.2022	-	
4	Directed Site-Selective C-H Functionalization of Aromatic and Heteroaromatic Precursors	DR. ALAGIRI KALYANMOORTHY	EFQ/2016/000231	SERB	11.05.2017	10.05.2021	6.30	
5	Brain-like computing-Designing the basic building blocks for artificial neurons and synapses	DR. BIKAS C DAS	184-15/2018 (IC)	UGC	01.04.2018	31.03.2021	-	
6	Conformal approach to supergravity: New Perspectives and Applications	DR. BINDUSAR SAHOO	CRG/2018/002373	SERB	27.03.2019	26.03.2022	2.50	
7	Development of solid state hybrid hydrogen using Palladium and Magnesium nanostructures	DR. DEEPSHIKHA JAISWAL NAGAR	ISRO-DS-2B-13012 (2)/42/2017	ISRO	01.03.2018	08.12.2021	2.23	
8	Palladium and Magnesium based hybrid nanostructure structures for high gravimetric capacity hydrogen storage	DR. DEEPSHIKHA JAISWAL NAGAR	DST/TMD/HFC/2K18/37 (C) & (G)	DST	17.09.2019	16.09.2022	-	
9	Study of Convolution Operators on Topological Groups	DR. DEVARAJ PONNAIAH	MTR/2018/000559	SERB	14.03.2019	13.03.2022	2.20	
10	Inspire Faculty Award	DR. DHANYA RAJENDRAN	DST-INSPIRE FACULTY AWARD - IFA-15-MA-72	DST	20.04.2016	19.04.2022	11.67	PROJECT TRANSFERRED FROM IIT GOA
11	On certain class of diagram algebras arising from Schur-Weyl duality	DR. GEETHA T	MTR/2017/000424	SERB	06.06.2018	05.06.2021	1.00	
12	Design and Synthesis of Pie Extended and Ring- Extended Bio-Macrocyclic and Investigating their Photo-physical Properties for Optoelectronic Applications	DR. GOKULNATH SABAPATHI	CRG/2019/006303	SERB	05.02.2020	04.02.2023	-	
13	Infrared Plasmonics of Nanostructured Conducting Oxides for communication and spectroscopic applications	DR. JOY MITRA	CRG/2019/004965	SERB	07.02.2020	06.02.2023	-	
14	One-Dimensional Parity-Time (PT) Symmetric Optical Structures With Layered Media	DR. K SHADAK ALIEE	CSIR-03 (1457)/19/EMR-II	CSIR	05.08.2019	04.08.2022	-	RELIEVED FROM INSTITUTE
15	Functional Characterization of Genetic And Epigenetic Regulatory Networks Involved in the Reproductive Development in Rice	DR. KALIKA PRASAD	BT/PRI2394/AGIII/03/891/2014	DBT	20.11.2015	19.11.2021	-	
16	Control of stem cell heterogeneity during shoot regeneration in Arabidopsis - a functional and mechanistic analysis of its epigenetic regulators	DR. KALIKA PRASAD	EMR/2017/002503	SERB	21.05.2019	20.05.2022	10.00	
17	Noble-Metal free Advanced Catalysts for Hydrogen Generation and Fuel Cell Applications	DR. M M SHAJUMON	DST/TMD/MES/2K18/136 (C) & (G)	DST	23.10.2019	22.10.2022	-	
18	Hybrid Energy Storage Devices based on Multifunctional Nanocomposite Materials	DR. M M SHAJUMON	DST/TMD/MES/2K16/114 (C) & (G)	DST	23.05.2017	22.11.2020	-	
19	Engineered 2-dimensional transition metal Dichalcogenide (TMD) nanostructures for efficient hydrogen generation	DR. M M SHAJUMON	EMR/2017/000484	SERB	12.09.2017	11.09.2020	-	
20	Light Induced Energy Technologies: Utilizing Promising 2D Nanomaterials (Lite Up 2D)	DR. M M SHAJUMON	IUSSTF/JC-071/2017	OTHERS	09.03.2018	30.09.2020	-	
21	Multi-wavelength Selective Plane Illumination Microscope - with simultaneous magnification at multiple levels: A promising imaging technology for molecular and cellular biology	DR. M SURESH KUMAR SINGH	BT/PR30005/MED/32-657/2018	DBT	13.09.2019	12.09.2022	9.00	
22	Van Der Waals superconducting circuits operating at elevated temperatures & magnetic fields	DR. MADHU THALAKULAM	CRG/2018/004213	SERB	20.03.2019	19.03.2022	-	
23	Quantum point contact charge amplifiers embedded in a planar superconducting microwave resonator: Quantum-limited charge sensing and counting	DR. MADHU THALAKULAM	MHRD-STARS/APR2019/PS/363/FS	MHRD	31.12.2019	30.12.2022	-	
24	Inspire Faculty Award	DR. MANIK BANIK	DST-INSPIRE FACULTY AWARD/BATCH-13/2017	DST	18.04.2018	17.04.2023	9.69	PROJECT TRANSFERRED FROM S. N. Bose National Centre for Basic Sciences, KOLKATA

25	Integration of 2D materials in organic and inorganic-organic hybrid solar cells: insights into charge extraction and transport	DR. MANOJ AG NAMBOOTHY	MHRD-STARS/APR2019/PS/308/FS	MHRD	31.12.2019	30.12.2022	-
26	Approaches to improve open circuit voltage and fill factor- Enhancing the power conversion efficiency in organic and inorganic-inorganic hybrid systems	DR. MANOJ AG NAMBOOTHY	DST/TMD/SER/S15 (C) & (G)	DST	17.05.2017	16.05.2020	5.11
27	Application-development of genome editing tools for gene target discovery and understanding regulation of cholesterol metabolism genes	DR. N SADANANDA SINGH	BT/RL/Re-entry/17/2015	DBT	01.08.2017	31.07.2022	4.99
28	CRISPR/CAS9 based whole genome screening for response to drug treatment	DR. N SADANANDA SINGH	ECR/2016/000979	SERB	17.07.2018	16.07.2021	8.00
29	Development of New and Utilization of Existing Crispr-Cas Tools to Understand Genetic Regulators of Cytoskeleton in Cardiac myocyte	DR. N SADANANDA SINGH	EEQ/2018/001090	SERB	22.03.2019	21.03.2022	9.00
30	Mathematical analysis for an optimal control of reaction-diffusion equations in cardiac defibrillation	DR. NAGAI AH CHAMAKURI	EMR/2017/000664	SERB	01.11.2018	31.10.2021	2.89
31	Numerical analysis and simulation of state constrained optimization for multiscale problems	DR. NAGAI AH CHAMAKURI	MTR/2017/000598	SERB	01.06.2018	31.05.2021	1.75
32	Eliciting post-transcriptional regulation of circadian behavior in <i>Drosophila</i>	DR. NISHA N KANNAN	IAU/15/2/502329	DBT	01.01.2017	31.12.2021	11.62
33	Mechanism of meiotic crossing over through the Mei4-Mei5 dependent pathway	DR. NISHANT K T	CRG/2018/000916	SERB	22.03.2019	21.03.2022	-
34	Scheme for Promotion of Academic and Research Collaboration (SPARC)	DR. NISHANT K T	SPARC/2018-20/958/SL (IN)	MHRD	15.03.2019	31.03.2022	-
35	Metal decorated graphynes for molecular absorption	DR. R S SWATHI	1640/2017/KSCSTE	KSCSTE	01.10.2018	30.09.2021	-
36	Investigation of the interaction of acoustic phonons with electrons in semiconductor nanostructures	DR. RAJEEV N KINI	KSCSTE/431/2018-KSYSA-RG	KSCSTE	01.06.2018	31.05.2021	8.37
37	Terahertz spectroscopic studies of layered 2-D materials	DR. RAJEEV N KINI	CRG/2019/004865	SERB	18.01.2020	17.01.2023	-
38	Twistronics with transition metal dichalcogenides	DR. RAJEEV N KINI	IPA/2020/000021	SERB	26.03.2020	26.03.2025	-
39	Ramanujan Fellowship	DR. RAJENDAR GORETTI	SB/S/2/RN-071/2015	DST	31.10.2016	30.10.2021	4.20
40	Targeted Editing Of Potato Genome To Develop Variety Specific True Potato Seed (TPS)	DR. RAVI MARUTHACHALAM	ICAR-NASF/GT-7024/2018-19	ICAR	01.11.2018	31.10.2021	9.84
41	Epigenetic modulation of centromeres to produce in vivo haploids by triggering uniparental genome elimination in plants	DR. RAVI MARUTHACHALAM	MHRD-STARS/APR2019/BS/818/FS	MHRD	31.12.2019	30.12.2022	-
42	Microresonator frequency combs in visible: A path to ultrashort pulse generation and spectroscopy	DR. RAVI PANT	CRG/2019/000993	SERB	15.01.2020	14.01.2023	-
43	Ramanujan Fellowship	DR. RAVI PANT	SB/S/2/RN-069/2014	DST	17.12.2015	16.12.2020	-
44	High fluorine content DNA molecule: A Universal "OFF-ON" 19F-NMR-based probe for the detection of miRNA and Telomerase for cancer diagnosis	DR. REJI VARGHESE	BT/PR/30/172/NN/T28/1593/2018	DBT	11.02.2019	10.02.2022	13.22
45	Conflict between Replication and Transcription accelerates Mutagenesis and drives Antibiotic Resistance	DR. SABARI SANKAR THIRUPATHI	IAU/18/2/504037	DBT	01.10.2019	30.09.2024	37.03
46	Guage theory of categorical principal bundles	DR. SAIKAT CHATTERJEE	MTR/2018/000528	SERB	12.03.2019	11.03.2022	2.20
47	Moduli Space of Vector Bundles Over Smooth Projective Surfaces and ACM Bundles	DR. SARBESWAR PAL	EMR/2015/002172	SERB	15.05.2018	14.05.2021	0.80
48	Understanding the role of Perostin-IgG interactions in adult and fetal hematopoiesis	DR. SATISH KIHURANA	IAU/15/2/502061	DBT	01.12.2016	30.11.2021	33.78
49	Investigating post-transcriptional regulation of steroidogenic genes during development	DR. SMITHA VISHNU	SR/WOS-A/LS-457/2017 (G)	DST	19.02.2019	18.02.2022	10.45
50	Combinatorial exploration and property control of oxide based power semiconductors	DR. SOMU KUMARAGURUBARAN	DST/INT/ISPS-P-288/2019	DST	26.06.2019	25.06.2021	-

51	Insights into the Interplay of H ₂ S and NO at Redox Active Metal sites	DR. SUBRATA KUNDU	ECR/2017/003200	SERB	20.07.2018	19.07.2021	4.00	
52	Numerical analysis and computational methods for hyperbolic conservation laws	DR. SUDASHAN KUMAR	MTR/2017/000649	SERB	13.06.2018	12.06.2021	1.59	PROJECT TRANSFERRED FROM IIT GUWAHATI
53	Tailoring the Catalytic Properties of Atom-Precise Metal Nanoclusters	DR. SUKHENDU MANDAL	EMR/2016/007501	SERB	09.07.2018	08.07.2021	9.00	
54	Atomically precise alloy nanocluster as promising electro-catalyst for carbon dioxide and nitrogen reduction	DR. SUKHENDU MANDAL	DST/INT/SPS/P-285/2019	DST	26.06.2019	25.06.2021	0.79	
55	Some Extremum Eigenvalue Problems Related To Combinatorial PDE	DR. SUMIT MOHANTY	MTR/2017/000458	SERB	29.05.2018	28.05.2021	-	RELIEVED FROM INSTITUTE
56	Women Scientist Scheme - Novel polymer supported chiral metal catalysts: asymmetric cross-coupling reactions	DR. TAMILSELVI CHINNU SAMY	SR/WOS-A/CS-105/2016 (C) & (G)	DST	18.08.2017	17.08.2020	-	
57	Understanding diversification of Impatiens species in the Northern Western Ghats	DR. ULLASA KODANDARAMIAH	BT/PR/27535/NDB/39/600/2018	DBT	24.09.2018	23.09.2021	-	
58	Comparative biogeography of plants of the Western Ghats	DR. ULLASA KODANDARAMIAH	BT/PR/12720/COE/34/21/2015	DBT	14.05.2015	13.05.2020	-	
59	Inspire Faculty Award - Development of Novel metal oxide-graphene based nanocomposite Materials for Microsensors and Nano electronics device applications	DR. VINAYAK B KAMBLE	DST/INSPIRE Faculty Award/2016/DST/INSPIRE/04/2015/002111	DST	28.07.2016	27.07.2021	14.86	
60	Junction Barrier modulation study in engineered core-shell oxide heterostructure Gas sensor device	DR. VINAYAK B KAMBLE	DST/NM/NT/2018/124 (C) & (G)	DST	30.10.2018	29.10.2021	9.50	
61	Study of Novel Oxide and Graphene Core Shell nanoarchitectures for High Temperature Thermoelectric Power Generations	DR. VINAYAK B KAMBLE	EEQ/2018/000769	SERB	16.03.2019	15.03.2022	3.00	
62	Structural and thermodynamic study of the phase separation of TIA1 in the presence of Tau protein and the influence of the phase separation on protein aggregation	DR. VINESH VIJAYAN	CRG/2019/004880	SERB	05.02.2020	04.02.2023	7.00	
63	Structural characterization of functional prion domain of mammalian cytoplasmic polyadenylation element-binding protein 3 (CPEB3)	DR. VINESH VIJAYAN	MHRD-STARS/APR/2019/BS/708/FS	MHRD	31.12.2019	30.12.2022	-	
64	FIST PROGRAM	HOD, SOB	SR/FST/LS-IL/2018/217 (C)	DST	27.08.2019	26.08.2024	-	
65	FIST Program	HOD, SOC	SR/FST/CSII-042/2016 (C)	DST	07.03.2017	06.03.2022	-	
66	FIST PROGRAM	HOD, SOP	SR/FST/CSII-042/2016 (C)	DST	22.07.2019	21.07.2024	-	
67	Localization and flow of information in quantum computing and open quantum dynamics	PROF. ANIL SHAJI	EMR/2016/007221	SERB	13.07.2017	01.04.2021	-	
68	Integrating collective behaviour with biomechanics of social spider webs	PROF. HEMA SOMANATHAN	CRG/2019/003805	SERB	19.03.2020	18.03.2023	-	
69	Community Plant-Pollinator Interactions at the Landscape Level	PROF. HEMA SOMANATHAN	BT/PR/12720/COE/34/21/2015	DBT	14.05.2015	13.05.2020	-	
70	Ecology and Conservation of Freshwater Swamp Ecosystems of the Western Ghats-Kerala Region	PROF. HEMA SOMANATHAN	BT/PR/12720/COE/34/21/2015	DBT	14.05.2015	13.05.2020	-	
71	The Effect of Interannual Variation in Flowering Intensity, Periodicity and Synchrony on Pollination and Fruit Set in a Highly Seasonal Tropical Forest in the Western Ghats	PROF. HEMA SOMANATHAN	EMR/2014/000705	SERB	13.03.2018	12.03.2021	-	
72	Design of a Surface-Enhanced Spectroscopy Based Device for the Rapid Detection of Organophosphate Pesticides and Pyrethroid Insecticides in Fruits and Vegetables	PROF. K. GEORGE THOMAS	SR/S9/Z-05/2015	SERB	19.08.2017	31.03.2022	3.71	
73	JC BOSE FELLOWSHIP	PROF. K. GEORGE THOMAS	SB/S2/CB-64/2013	SERB	01.06.2019	31.05.2024	14.00	
74	Synthesis of Pseudoprotons by Topochemical Azide-Alkyne Cycloaddition Reactions	PROF. K. M SURESHAN	CRG/2018/000577	SERB	30.03.2019	29.03.2022	13.00	
75	Unravelling the interplay of reorganization energy, driving force and electronic coupling on the rate of electron transfer	PROF. MAHESH HARIHARAN	CRG/2019/002119	SERB	06.02.2020	05.02.2023	2.00	

76	Charge and Energy Transfer in Molecular Multifunctional Materials	PROF. MAHESH HARIHARAN	INT/ITALY/P-9/2016(ER)	DST	16.11.2017	15.11.2020	-
77	Study of Exotic Ground States in Frustrated Triangular Lattice Antiferromagnets	PROF. RAMESH CHANDRA NATH	CRG/2019/000960	SERB	20.12.2019	19.12.2022	2.00
78	Synthesis and Characterization of Frustrated Spin-1/2 Chain Compounds	PROF. RAMESH CHANDRA NATH	37(3)/14/26/2017	DAE	29.12.2017	31.03.2021	8.48
79	Identification and Characterization of Molecular Pathways involved in Immune-related Autophagy	PROF. SRINIVASA MURTY SRINIVASULA	BT/PR21325/BRB/101554/2016	DBT	15.03.2018	14.03.2022	21.90
80	RNF167, an ubiquitin E3 ligase with several reported mutations in diverse cancers, controls NF- κ B activation	PROF. SRINIVASA MURTY SRINIVASULA	EMR/2016/008048	SERB	22.06.2018	21.06.2021	6.00
81	Elucidating the Role of GTP-Induced Transition of EB1 Dimer to Mesomer in the Regulation of Microtubule Plus Ends	PROF. TAPAS KUMAR MANNA	CSIR-37(1688)/17/EMR-II	CSIR	01.05.2017	30.04.2020	-
82	Identification and characterization of the molecular factors for the quality-control of kinetochore size and fidelity of spindle-chromosome attachment	PROF. TAPAS KUMAR MANNA	BT/PS30271/BRB/101740/2018	DBT	29.07.2019	28.07.2022	18.61
83	The role of colonic hepatic Tumor Over-expressed Gene (ghTOG) in regulation of kinetochores size and fidelity of mitotic chromosome segregation	PROF. TAPAS KUMAR MANNA	BT/HRD-NBA-NWB/38/2019-20(7)	DBT	19.02.2020	18.02.2023	-
84	To Determine the Role of Ubiquitin Ligase Scf-Fbxw7 in Regulation of Centriole Biogenesis and Duplication in Human Cells	PROF. TAPAS KUMAR MANNA	EMR/2016/001562	SERB	29.03.2017	28.08.2020	-
85	Study of Stochastic Nematic Liquid Crystal Models and Related Constrained Physical Problems	PROF. UTPAL MANNA	MTR/2018/000034	SERB	14.03.2019	13.03.2022	1.00