

Research Projects

List of ongoing projects

Principal Investigator: Prof. S. Arumugam

S. No	Title of the project	Grant sanctioned in Rs.	Funding agency
1.	<i>Pressure-Induced Quantum Phase Transition in Novel Magnetic Materials (2021-2024)</i>	47 Lakhs	DAE-BRNS
2.	<i>Tuning of magnetocaloric properties of Heusler alloys for room temperature magnetic refrigeration applications (2021-2024)</i>	46 Lakhs	TANSCHETamil Nadu
3.	<i>Structural and transport properties of chalcogenide superconductors under extreme conditions of high pressure (50 GPa) low temperature (2K) and high magnetic field (9T) (2020-2023)</i>	~7 Lakhs	UGC- IUC-CRS-ISUM
4.	<i>Sustainable Energy Technologies – Efficient Renewable Energy power generation with energy storage for sustainable smart grid</i>	150 lakhs	RUSA

Co- Principal Investigator: Prof. S. Arumugam

S. No	Title of the project	Grant sanctioned in Rs.	Funding agency
1.	<i>Integrated Self Powered Energy Storage Systems (2019-22)</i>	9.4 lakhs	DST-TMD-MES
2	<i>Investigation of Transport, Magnetic and Electrochemical properties of Nanostructured Conductive Diamond films for Superconductivity and Pesticides sensing applications</i>	Just Sanctioned	DST-Indo-Poland

List of projects completed

Principal Investigator: Prof. S. Arumugam

S. No.	Title of the Project	Grant sanctioned in Rs.	Funding agency
1.	<i>Study of Colossal Magnetoresistance Materials under Pressure for Sensor Applications.</i> (2001 – 2004)	14 Lakhs	AICTE, New Delhi.
2.	<i>Study of Colossal Magnetoresistance Materials under Hydrostatic and Uniaxial Pressure. (2001 -2004)</i>	~4.1Lakhs	ICTP-TWAS, Italy.
3.	<i>Development of DAC-SQUID Vibrating Coil Magnetometer for High Pressure Investigation.</i> (2001 – 2005)	12.34 Lakhs	BRNS, DAE, Mumbai.
4.	<i>Development of Experimental Setup for Uniaxial Pressure Effects on AC Susceptibility measurements at Low Temperature. (2004 – 2007)</i>	9.0 Lakhs	CSIR, New Delhi.
5.	<i>Structural Effects on Charge and Orbital Order Probed by Hydrostatic and Uniaxial Pressure Studies.</i> (2006- 2007)	2.94 Lakhs	DST-DAAD PPP, New Delhi.
6.	<i>Pressure Effects on Manganites under Low Temperature and High Magnetic Field.</i>	11.1 lakhs	UGC, New Delhi.
7.	<i>Development of Cryogen free Low Temperature, High Magnetic Field and High Pressure Facilities for Transport and Magnetic Measurements.</i> (2008 - 2011)	2.35 Crores	DST, New Delhi.
8.	<i>Transport and Magnetic Properties of Strongly Correlated Systems at Extreme Conditions of Pressure, Low Temperature and High Magnetic Field.</i> (2009 - 2012)	27 lakhs	Indo-Swiss, New Delhi.
9.	<i>Investigation of Organic Conductors under Extreme Conditions of High Pressure, Low Temperature and High Magnetic Field.</i> (2010 - 2012)	3.4 lakhs	DST-JSPS, New Delhi.
10.	<i>Electronic Transport and Magnetic Studies in Heusler type Co-Fe-Si Alloy thin films at Low Temperature and High Magnetic Field.</i> (2012 - 2013)	10 lakhs	DMRL-CARS, Hyderabad.
11.	<i>Hydrostatic Pressure Effect on Manganites Single Crystals under High Pressure Low Temperature.</i> (2011 - 2014)	3.5 lakhs	UGC, New Delhi.
12.	<i>Development of Uniaxial Pressure and Modified Bridgman Anvil Devices for Transport and Magnetic Measurements.</i> (2012 - 2014)	60 Lakhs	DST-IDP New Delhi.
13.	<i>Pressure Effect on the Properties of Organic Conductors and Pnictides Superconductors.</i> (2013 - 2014)	5.74 Lakhs	DST-JSPS, New Delhi.
14.	<i>Development of Bridgman Anvil Pressure Cell for Electrical Resistivity and Thermoelectric Power Measurement and Investigation of Half Heusler Alloys.</i> (2012 – 2015)	30 lakhs	DAE-BRNS, Mumbai.
15.	<i>Synthesis, Characterization and Investigation of Heusler Alloys Based Magnetocaloric Materials at Extreme Conditions of Pressure, Temperature and Magnetic Field.</i> (2013 – 2016)	54 lakhs	DRDO, New Delhi.

16.	<i>Transport properties of Fe-based Superconductors under Extreme Conditions of High Pressure, Low Temperature and High Magnetic Field.</i> (2013 – 2016)	21.8 lakhs	DST-SERB, New Delhi.
17.	<i>Studies of Spin Ladder and Heavy Fermion Systems in Extreme Conditions of Hydrostatic Pressure and Low Temperature. (2013-2016)</i>	101 Lakhs	Indo-French, New Delhi.
18.	<i>Pressure Effect on Magnetic and Transport Properties of Highly Anisotropic Systems Spin Ladder and Decagonal Quasicrystalline Single Crystals.</i> (2014- 2016)	12 lakhs	DST - Indo-Russia, New Delhi.
19	<i>Synthesis and physical properties of new superconductors using high-pressure technique.</i> (2018-2020)	6.2 lakhs	DST-JSPS, New Delhi.
20	<i>Synthesis, Characterization, Application and Pressure Effect on Atom-Thin 2D Superconductors</i> (2019-2021)	21 lakhs	DST-ASEAN
21	<i>Investigation of transport and magnetic properties of novel Fe- and BiS₂- based superconductors under extreme conditions of high pressure, low temperature and high magnetic field</i> (2019-2022)	213lakhs	DST-SERB
22	<i>Synthesis, Characterization and Magnetocaloric studies on Heusler alloys at extreme conditions of Pressure, Temperature and Magnetic field.</i> (2018-2021)	~7 lakhs	UGC-DAE-CSR, Indore.