

**Research Grants
Cluster Innovation Centre
University of Delhi**

**Number of Research Projects: 49
Total grants received : 1460.606 Lakhs**

S.No.	Project	Project PI	Funding agencies	Duration	Funds in lakhs
1.	Establishing Process Based Identification and Mentoring Practices for Potentially Gifted Children in Science and Mathematics	Dr. Jyoti Sharma (PI) Prof. Pankaj Tyagi (Co-PI) Prof. Shobha Bagai (Co-PI) Prof. Bibhu Biswal (Co-PI)	Office of the Principal Scientific Advisor to the Govt. of India	2014-17	162.616
2.	Validation of DIMP Model of Identification of Gifted Children in collaboration with Vigyan Bharti	Dr. Jyoti Sharma (PI)	Office of the Principal Scientific Advisor to GoI	2014-15	23.70
3.	Characterization of the novel histone H2A specific protease from chicken liver nuclear extract	Dr. Jageswar Satchidananda Purohit	UGC	2014-2015	11.55
4.	Declining Sex Ratio in Jammu & Kashmir: A Ground Perspective.	Dr. Saleem Mir	Indian Council of Social Science Research (ICSSR)	2013-2016	06
5.	Purification of a Novel Histone H2A Specific Protease from Chicken Liver Nuclear Extract.	Dr. Jageswar Satchidananda Purohit	R & D, DU	2015-16	03
6.	Dynamics and Control of Infectious Disease in Humans: Mathematical Modelling	Prof. Shobha Bagai	R & D, DU	2015-16	1.5
7.	Concept Map as Pedagogy tool for teaching Calculus	Dr. Jyoti Sharma	R & D, DU	2014-15	1.5

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9.	Water Scarcity in Delhi: Demand Supply Analysis.	Dr. Saleem Mir	R & D, DU	2015 – 16	1.5
10.	Trajectory tracking control of robot manipulators using neural networks	Dr. Harendra Pal Singh	R&D,DU	2015-16	2.6
11.	Tracking expression patterns of mycobacterial secreted virulence factors'	Dr. Asani Bhadhuri	R & D, DU	2015-16	3
12.	Modeling and simulation of spread of disease on social networks.	Prof. B. Biswal (PI)	R & D, DU	2014-15	2.1
13.	To study structural and optical properties of semiconductor materials in thin film grown by physical vapour deposition method.	Prof. Pankaj Tyagi	R & D, DU	2014-15	1.4
14.	Natural Convective Flow in Porous Medium Saturated with Nanofluid	Prof. Shobha Bagai	R & D, DU	2014-15	1.2
15.	Fabrication and characterization of Perovskite solar cell	Dr. Swati Arora	R & D, DU	2014-15	3.0
16.	CIC 201: Digital reconstruction of lost art and craft	Prof. B. Biswal	Innovation Project, DU	2013-15	7.5
17.	CIC 202: Designing Innovative working models to explain concepts of physics and mathematics along with IT based module	Prof. Pankaj Tyagi	Innovation Project, DU	2013-15	7.5
18.	CIC-203 Modelling metro feeder Bus Service in North Campus: Feasibility and financial Viability	Dr. Jyoti Sharma	Innovation Project, DU	2013-15	5.5
19.	CIC 204: Template replication- village Transformation Replicating the success stories of Hiware Bazar, Maharashtra	Dr. Vikas Kumar Verma	Innovation Project, DU	2013-15	4.5
20.	CIC 205: Impact of FDI in multibrand retail on local kirana shops.	Prof. Shobha Bagai	Innovation Project, DU	2013-15	4.5

21.	CIC 206: Improving the current system of Junk Management and Recycling	Prof. Shashi Aggarwal (Handed over to Prof. B. Biswal)	Innovation Project, DU	2013-15	4.5
22.	Exploring the use of Biocatalysis in laboratory chemical reactions: A □Green Chemistry Approach (RC 201)	Dr. Mahima Kaushik	Innovation Project, DU	2013-15	04
23.	CIC 301: The Vanishing Portuguese houses of Goa: Pointer of Ecological Disaster	Dr. Nirmal Kumar	Innovation Project, DU	2015-16	05
24.	CIC 302: Impact Analysis of Programmes for Enhancing Undergraduate Learning and Teaching Experiences through Innovative Projects	Dr. Dorje Dawa	Innovation Project, DU	2015-16	4.5
25.	CIC 303: Innovatively designed physics experimental modules with link to interactive website and mobile apps	Prof. Pankaj Tyagi	Innovation Project, DU	2015-16	05
26.	CIC 304 Exploring Solar Energy and its Applications: Fabrication of Day to Day Utility Appliance/Devices	Dr. Swati Arora Ms. Shobha (Co-PI)	Innovation Project, DU	2015-16	06
27.	CIC 305: Innovating for Village Transformation: An Exploration of the Hiware Bazar Model of Rural Development	Dr. M Saleem Mir (PI) Dr Nirmal Yadav (Co-PI)	Innovation Project, DU	2015-16	4.5
28.	CIC 306: Holistic Approach of Fighting Cancer: From Prevention to Cure	Dr. Mahima Kaushik Ms. Alka Dutt (Co-PI)	Innovation Project, DU	2015-16	7.0
29.	CIC-307: Developing an affordable three-dimensional Bio-printer' facility	Dr. Asani Bhaduri	Innovation Project, DU	2015-16	7.0
30.	CIC 308: Translating 'Lilavati of Bhaskara' in the realm of present Mathematics Curriculum	Dr. Jyoti Sharma(PI) Dr. Harendra Pal Singh(Co PI)	Innovation Project, DU	2015-16	4.5

		Mr. Anjani K Verma (Co PI)			
31.	CIC 309: Development of Intelligent 3D-printed prosthetics	Prof B Biswal (PI) Dr. J S Purohit (Co PI)	Innovation Project, DU	2015-16	4.5
32.	CIC 310: Weaving Dreams for Destitutes – Night Shelters	Prof. Shobha Bagai (PI) Mr. Sachin Kumar (Co PI) Dr. Sonam Singh (Co PI)	Innovation Project, DU	2015-16	4.5
33.	CIC 311: Aggressive Behaviour amongst School Children of India	Dr Achla Tandon	Innovation Project, DU	2015-16	4
34.	Start-up Research Grant (Young Scientists)	Dr Asani Bhaduri	SERB-DST	2016-18	19.8
35.	Characterization of the H3 specific protease (H3ase) activity of the chicken liver glutamate dehydrogenase (GDH)	Dr Jogeswar S. Purohit	DST-SERB-EMR grant	2016- 17	62.74
36.	Design, analysis and motion control of robots with uncertainties	Dr. Harendra Pal Singh	UGC	2016-18	6
37.	Research work	Dr. Mahima Kaushik	R&D, University of Delhi, Delhi	2015-16	2.6
38.	Natural convection in Porous Media	Prof Shobha Bagai,	R&D, University of Delhi	2014-15	2.8
39.	“Optical Properties of Layered Structured Semiconductors Quantum Dots and Photonic Materials”	Pankaj Tyagi	R&D, University of Delhi	2012-13	2.5
40.	“Study of optical properties of layered structured semiconductors”	Pankaj Tyagi	R&D, University of Delhi	2013-14	2.8
41.	“Study of novel properties of metal dichalcogenides and oxides in thin film form”	Pankaj Tyagi	R&D, University of Delhi	2015-16	2.7

42.	Research Work	Prof. B. Biswal	R&D, University of Delhi	2012-13	2.5
43.	Research Work	Prof. B. Biswal	R&D, University of Delhi	2013-14	2.8
44.	Research Work	Prof. B. Biswal	R&D, University of Delhi	2015-16	2.7
45.	24 x 7 water supply in villages and small towns of India	Prof B. Biswal (PI) , Prof Shobha Bagai , (Co-PI) Dr Sanjeev Singh (Co-PI)	Innovation Project, DU	2012	10
46.	Solutions for road management from modeling and simulation of traffic flow on selected road of Delhi funded by University of Delhi	Prof B. Biswal (PI), Prof Shobha Bagai (Co-PI), Dr Sanjeev Singh (Co-PI)	Innovation Project, DU	2012	10
47.	IT model for parking space management: optimal and efficient parking – retrieval of vehicles funded by University of Delhi	Prof B. Biswal (PI), Prof Shobha Bagai (Co-PI), Prof Pankaj Tyagi (Co-PI)	Innovation Project, DU	2012	10
48.	Technology Business Incubator	CIC	MoMSME	2014	35.04 l
49.	Design Innovation Centre	CIC	MHRD	2014	1000

Inter –institutional collaborative projects and Associated grants received

National collaboration:

1. Under the concept of Meta University, M.Sc. (Mathematics Education) is a joint degree two year postgraduate programme jointly offered by University of Delhi and Jamia Millia Islamia. CIC, University of Delhi, administratively manages the programme. It received a grant of 66 lakhs in 2014.
2. In fulfilment of the B.A. Hons. (Humanities and Social Sciences), under the Meta College concept, CIC has active participation and linkages with other departments in 80 colleges within Delhi University. No separate funds has been granted. This program commenced in 2012.
3. The Design Innovation Centre (DUDIC) at the CIC, University of Delhi has been established under the scheme “National Initiative for setting up of Design Innovation

Centres, Open Design School & National Design Innovation Network” of Ministry of Human Resource and Development. It works in collaboration with its three spokes - School of Planning and Architecture (New Delhi), Jamia Millia Islamia (New Delhi), and Islamic University of Science and Technology (J&K). The total grant received was Rs. 10 crores in 2014 (Rs. 7 crores for the hub, and Rs. 1 crore each for the three spoke partners.).

4. A MoU has been signed between eYantra, IIT Bombay and CIC to set up a nodal center at CIC. Under this a number of workshops have been conducted for teachers and students. No grant has been received under the MoU.

International collaboration: Nil

Departmental projects funded by DST-FIST,UGC-SAP/CAS,DPE, DBT, ICSSR, AICTE etc.,

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Total grants received:

The details of the many pillars of CIC has to be listed to give a complete picture of the volume of work being done, though the many activities and projects of CIC cannot be put under the head ‘Department ‘.

1. The Design Innovation Centre (DUDIC) at the CIC, University of Delhi has been established under the scheme “National Initiative for setting up of Design Innovation Centres, Open Design School & National Design Innovation Network” of Ministry of Human Resource and Development. It works in collaboration with its three spokes - School of Planning and Architecture (New Delhi), Jamia Millia Islamia (New Delhi), and Islamic University of Science and Technology (J&K). The scheme has two major objectives: to spread Design Education, thereby creating Design Culture and Design thinking, and to promote innovation, mainly engaging but not limited to UG students. DUDIC is an integral part of Cluster Innovation Centre ecosystem fulfilling the function of planning and implementation for design innovations and support prototyping. The total grant received was Rs. 10 crores in 2014 (Rs. 7 crores for the hub, and Rs. 1 crore each for the three spoke partners.).

- 2. Technology Business Incubator:** The DUCIC TBI (MSME) was established in CIC in 2014. It acts as a ‘start-up accelerator and entrepreneurship programme’ funded by the central government Ministry of MSME to encourage students to take their idea to product to business through seed funding under PPP mode.

Currently DUCIC - TBI (MSME) provides laboratory/workshop facilities and office space to the selected incubates in a Public Private Partnership (PPP) mode with the incubatee committing 15% of the cost of incubation for leading to a micro scale start-up or 25% of the cost of incubation for leading to a small scale start-up. Funding may range between Rupees Four lakh and Rupees Eight lakh.

At present 8 projects are being incubated out of which four are in the product development stage, two are in the market testing stage, one has received VC funding for final launch, and one is already a profit making start-up.

The total funding provided by the ministry of MSME for these projects is Rs.35.046 lakhs in 2014.

- 3. Gifted Education Project:** A national level project funded by the Office of Principal

Scientific Advisor to the Government of India with a sanctioned grant of One Crore Sixty Two Lakhs Sixty One Thousand and Six Hundred Only (1,62,61,600) in the year 2014, it aims to identify and nurture children with high potential, known as Gifted Children. The project is spread across five states. Pursuing holistic solutions to the problem, the project has developed indigenous methods of identification of children ranging between the age group of three to 15 years. Mentoring of identified group of students and training the teachers for the education of gifted children are two important components of the project. The project has emerged as a unique program where school children from the disadvantaged section of the society are also mentored by the CIC faculty.

- 4. Aruna Asaf Ali Chair and the Tantya Tope Chair** are endowed Chairs instituted by the Ministry of Culture, Government of India and established at Cluster Innovation Centre by the University of Delhi, with the broad objective of commemorating the "First War of Independence, 1857" and promoting national integration amongst the students.

The University of Delhi has appointed the noted poet, critic and academic Dr. Sukrita Paul Kumar to hold the Aruna Asaf Ali Chair. Renowned Researcher and Historian, Dr. Amrit Kaur Basra has been recently appointed to hold the Tantya Tope Chair. Rs. 21 lakhs was granted for each of these chairs in 2014.

- 5. MHRD IPR Chair (Technical)** has been operative at the Cluster Innovation Centre at Delhi University since 20th February 2014 with Dr. Rekha Chaturvedi as the IPR Chair Professor. Apart from its various objectives, organising workshops to train faculty and students in IPR matters, developing inputs for policy formulation, awareness drives among various stakeholders, developing course material in IPR for higher education are few activities the IPR team is involved in. Dr. Rekha Chaturvedi was formerly at CSIR-IGIB as Chief Scientist and Head, IPR. A grant of Rs 50 lacs was received in 2015.

- 6.** CIC has signed an MoU with **TATA Power Delhi Distribution Limited (TPDDL)** in 2014 for participation of students in solving problems in areas of demand automation, data analytics, advanced metering infrastructure that will not only benefit the company but the society and nation in general. No grants was received under the MoU.
- 7.** CIC is jointly working with **Ministry of Railways**, Government of India (since 2014) towards development of a Train Punctuality Index (TPI) and real-time monitoring system on measuring train network performance using IT and mathematical modeling. His project also has no grants associated with it.