Memorandum of Understanding
on promoting research under IMPRINT

Whereas, *IMPacting Research INnovation and Technology (IMPRINT),* a flagship national initiative of the Government, launched by the President, Prime Minister and Human Resource Minister on November 5, 2015 aims at addressing and providing solutions to the most relevant engineering challenges faced by the nation by translating knowledge into viable technology (products or processes) in selected technology domains to enable, empower and embolden the nation for *inclusive growth and self-reliance* (Details about *IMPRINT* is available at www.imprint-india.org.

Whereas 10 technology domains have been identified under IMPRINT that could substantially impact the quality, safety and security of life both in urban and rural areas, namely: (1) Healthcare, (2) Energy, (3) Sustainable Habitat, (4) Nano Technology Hardware, (5) Water Resources and River Systems, (6) Advanced Materials, (7) Information and Communication Technology, (8) Manufacturing, (9) Security and Defence, and (10) Environmental Science and Climate Change.

Whereas *IMPRINT* being a multi-disciplinary, multi-partner and multi-goal oriented national programme aimed at technology development covering all engineering disciplines, steered by all IITs and IISc, it is desired that the entire engineering fraternity of the nation including IITs, NITs, national academies, governmental ministries and departments, research organizations, strategic sectors, policy agencies and industry ultimately join hands and own the collective responsibility.

Whereas *IMPRINT* aims to synergize with all the major initiatives of the Government of India like Make in India, Digital India, Skill India, Namami Gange, Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT), Unnat Bharat Abhiyan, Swachch Bharat Mission etc; and other Ministries of Government of India are engaged in research covering these domains, and there is a need to converge the efforts to avoid duplication of efforts.

Whereas, in a meeting held on 14th December 2015 on implementation of *IMPRINT* at the Department of Science & Technology, New Delhi, it was decided to sign a formal MoU among all participating Ministries/Departments for achieving coordination, prioritization and synergy among all the Schemes/Projects/Programs to ensure alignment with the programs and avoid overlapping, leading to successful, effective and efficient implementation of such development programs of Government of India.

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Whereas with the above objective in view, an inter-ministerial workshop has been conducted in which (14) Departments and Ministries of Government of India have participated, and some of these Departments have participated in the 2nd level workshops to identity 5 to 10 themes under each Domain after assessing the needs of the participating Ministries, and have committed resources for funding research.

This **MEMORANDUM OF UNDERSTANDING (MOU)** executed on **31** day of March, 2016 for joint action for promoting research in premier technical institutions through the IMPRINT programme in between the under-mentioned (25) Ministries/Departments of Government of India (hereinafter referred to as the Participating Agencies (PAs) namely:

S.No.	Ministries/ Departments
1.	Ministry of Human Resource Development
2.	Ministry of AYUSH
3.	Ministry of Drinking Water & Sanitation
4.	Ministry of Earth Sciences
5.	Ministry of Environment, Forest and Climate Change
6.	Ministry of Health and Family Welfare
7.	Ministry of New and Renewable Energy
8.	Ministry of Power
9.	Ministry of Railways
10	Ministry of Road Transport And Highways
11	Ministry of Rural Development
12	Ministry of Steel
13	Ministry of Textiles
14	Ministry of Urban Development
15	Defense Research and Development Organisation
16	Department of Atomic Energy
17	Department of Biotechnology
18	Department of Electronics and Information Technology
19	Department of Heavy Industry and Public Enterprises
20	Department of Industrial Policy & Promotion
21	Department of Pharmaceuticals
22	Department of Science and Technology
23	Department for Scientific & Industrial Research
24	Department of Space
25	Indian Council of Medical Research

This Memorandum of Understanding witnesses as follows:

1.   Domain Areas, Hosts, and Coordinating Institutes:

IMPRINT comprises ten technology domains, hosted by a Ministry/Department and steered by an IIT or IISc as follows:

Domain	Ministry/ Department to host	Departments to participate	Coordinating Institute
Healthcare	Ministry of Health and Family Welfare	ICMR, AYUSH, Institute of Public Health, Dept of Biotechnology, Dept of Pharmaceuticals, M/O Drinking Water & Sanitation, and DeitY	IIT Kharagpur
Information & Communication Technology	DeitY	Ministry of Railways, DST, ICMR, Dept of Pharmaceuticals, Dept. of Space, DRDO & DAE	IIT Kharagpur
Energy	Ministry of Power	MNRE, DST, MoUD, DoS, DRDO, DAE and Deity	IIT Bombay
Sustainable Habitat and Swachh Bharat Mission	Ministry of Urban Development	MoRD	IIT Roorkee
Environment and Climate	Ministry of Environment, Forest and Climate Change	MoES (knowledge partner)	IISc, Bangalore
Water Resources (treatment of industrial pollution duly disaggregated industry-wise)	Ministry of Water Resources	DST, DSIR, MoEF and Ministry of Textiles, Dept of Pharmaceuticals,	IIT Kanpur
Nanotechnology (to cover the healthcare, automotive and aerospace segments)	Department of Science and Technology	DeitY, DoS, DAE,DRDO, Dept of Pharmaceuticals,	IIT Bombay

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Domain	Ministry/ Department to host	Departments to participate	Coordinating Institute
Advanced Materials	Department of Science and Technology	Ministry of Steel, Road Transport & Highways, Railways, Power, DoS, DRDO, DAE, Dept of Pharmaceuticals	IIT Kanpur
Manufacturing Technology	Heavy Industry	DIPP, Department of Heavy Industry and Public Enterprises, Dept of Pharmaceuticals and DSIR	IIT Madras
Defense and Security	DRDO	DeitY, DoS, DAE, MoES	IIT Madras and IIT Delhi
National Coordinator			IIT Kanpur

2. **Implementing structures:**

a. **Apex Committee:** An Apex Committee under the Chairmanship of Secretary (HE) and with membership of Participating Agencies/Ministries and domain experts would decide on all policy matters. The National Coordinator will be the Convener of the committee. The committee would have the authority to accord the final sanction and to decide on the financial closure. It would also monitor the progress of the implementation of this MOU. The Apex Committee will meet on periodic basis, once in six months or whenever necessary to review, monitor the progress of the implementation of the MOU.

b. **National Coordinator (NC):** The National Coordinator of the programme will be appointed by the Apex Committee. The Director IIT Kanpur has been designated as the first National Coordinator for the programme for a period of one year. The NC is responsible for the overall implementation of the project assisted by a cell created in IIT Kanpur.

c. **Domain Expert Committees (DECs):** For every domain area, there shall be a Domain Expert Committee (DEC), chaired by a subject matter expert of eminence and with such members as decided by the National Coordinator. The Domain Coordinator will be the convener of the DEC. The DEC would examine the project proposals based on peer reviews and the criteria approved by the Apex Committee; and recommend for approval, revision or rejection.

DEC also monitors the projects which have been approved by the Apex committee. Monitoring (by domain wise peer group) will be conducted after submission of quarterly/half yearly report. The DEC may based on this, advise major revision, course correction, fore-closure, or even termination depending on the progress of the project as per its own mandate.

d.   **Peer reviews:** For each domain, the National Coordinator will constitute groups consisting of experts from academia, industry and R&D organization in engineering and technology for a quick review of the proposals submitted. The peer reviews will be submitted online only, and would not require them to meet. All peer review, DEC and other committee members will be required to follow "Conflict of Interest" policy and should declare in writing the potential conflict of interest or otherwise before commenting on a particular application

3   **Role and responsibilities:**

a.   **Ministry of Human Resource Development:** The MHRD would be responsible for the following:
   i.   Laying down the Policy for implementation
   ii.   The coordination with the other departments
   iii.   Resolving the difficulties in implementation
   iv.   Meeting 50% cost of the project cost.

b.   **Participating Agencies:** The other departments and the Ministries would be responsible for the following:
   i.   Defining the requirements of research for inclusion in IMPRINT programme
   ii.   Participating in the Apex Committee meetings for selection of the projects
   iii.   Releasing 50% of the cost of the projects selected directly to the IMPRINT cell maintained by the National Coordinator
   iv.   To review the progress of the projects from time to time as a part of the Apex Committee

c.   **National Coordinator:** The NC would be responsible for the overall implementation of the project and shall be responsible for the following:

   i.   Constituting the Domain Expert Committees
   ii.   Constituting the Peer review committees
   iii.   Maintenance of the Portal
   iv.   Constituting the IMPRINT implementation cell with financial and administrative wings
   v.   Convening the Apex committee meetings

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4   Modalities of implementation

a.   Preliminary project proposals will be solicited from Indian citizens serving in one of the government funded engineering/technology institutions (including CFTIs or covered by TEQIP) and engaged in research and technology development in academic institutions, research organizations, government agencies, industry or any other competent group, in individual capacity or group, in any of the TEN technology domains and themes identified under IMPRINT.

b.   Proposals are desired to target end-to-end complete technological solutions and hence are expected to be multi-disciplinary, multi-institutional, and multi-partner with clearly identified and complementary role of each member.

c.   In case of multi-institutional team, clear definition of scope, role and responsibility of each group with a specific task and leader should be spelt out.

d.   Partnership with industry, R&D organizations (private/public), government agencies/departments, entrepreneurs and stakeholders are strongly encouraged.

e.   The decision of the DEC will be conveyed to PI tentatively within 30 days of submission deadline.

f.   Proposals with industry partner willing to share the financial budget of the project will be given preference.

g.   The most important criterion for selection of a proposal will be the promise, potential and evidence of technology development and its delivery (for commercialization, pilot scale demonstration, field trial/deployment) within a reasonable period of time.

h.   The preliminary proposals will be vetted by the National Peer Committee (for Screening-Reviewing-Monitoring), constituted from the experts mainly from academia, industry and R&D organization in engineering and technology and approved by MHRD.

i.   Each approved project proposal will receive financial support up to a maximum of Rs 3-4 crore (except in special cases with appropriate justification) for a period of 3 years.

j. Financial support may be utilized for small/essential capital expenditure, scholarship/stipend/honorarium (to student/scholar/staff/consultant appointed), contingency, consumable, travel, communication, information dissemination, organizing meetings/seminars, and pilot scale demonstration.

k. Manpower training (thesis at doctoral/masters level, even short projects and internship) is desirable.

l. Capacity building (new building, major renovation, major laboratory facility, new/large equipment purchase) should be avoided as far as possible.

m. Host or partner institutions may facilitate whenever such major infrastructure development, equipment purchase or facility creation is essential.

n. Facility created or equipment purchased through IMPRINT should be shared among all domain partners within/across the institutions.

o. Decision of the DEC after screening, review or monitoring will be electronically communicated by email or web based message delivery system.

p. The review report and feedback from the peer committee, and instructions for submitting the final proposal as per prescribed format.

q. Final decision about acceptance and funding of the proposal will be taken by the Apex Committee.

5 Funding mechanilopsm

a. The cost of running the projects would be shared equally between the MHRD and the Participating Agencies (PAs), subject to provision and availability of funds for research in their annual budgets.

b. The NC would constitute an IMPRINT Implementation Cell (IIC) for managing the funding system.

c. The funding agencies (MHRD and other PAs) would release the entire annual cost for running each project before August each year. Subsequent releases would be dependent on submitting the UCs in as per the procedure laid down.

d. NC will submit SE, UCs and other necessary documents to the PAs at the end of each financial year to facilitate release of grants.

6   **Intellectual Property and Commercialization:**

IMPRINT is meant for creating new engineering and technology solution to all relevant engineering challenges faced by the country. Thus creation of start-up companies, tie-up with established industries and commercialization will be the ultimate goal which may necessitate patenting and safeguarding the intellectual property by the inventors and investigators.

The IPs generated shall be shared between the investigator(s), industry partner(s), and others who are involved in generating the IPs, and the funding agencies will not have objections for them to share the IPs.

7   **Dispute resolution:**

Disputes, if any, will jointly resolve in a spirit of independence, mutual respect, and shared responsibility. The issues arising during the implementation of this MOU between the Parties shall be settled during the Apex Committee meeting. In all matters of dispute and arbitration, the decision of the Apex Committee would be final.

8   **Term of the MoU**

The MoU becomes effective immediately on signing and shall be valid for a period of three (3) years initially. The Parties may extend or terminate the MoU through mutual consultation in writing.

9   **Modification/Amendment to the MoU.**

Amendments/ additions /modifications to this MOU shall be in writing and with the consent of all Parties of this MoU.   All amendments/ modifications/additions agreed upon by the Parties shall become part of this MoU from the date of its signing by all the Parties.

IN WITNESS WHEREOF the participating ministries have executed this Memorandum of Understanding at the date, month and year first above written.
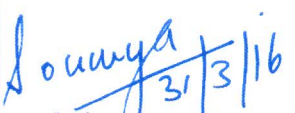
On Behalf of:

Ministry of Human Resource Development	Ministry of AYUSH	Ministry of Drinking Water & Sanitation
Ministry of Earth Sciences	Ministry of Environment, Forest and Climate Change	Ministry of Health and Family Welfare
Ministry of New and Renewable Energy	Ministry of Power	Ministry of Railways
Ministry of Road Transport And Highways	Ministry of Rural Development	Ministry of Steel
Ministry of Textiles	Ministry of Urban Development	Defense Research and Development Organisation
Department of Atomic Energy	Department of Biotechnology	Department of Electronics and Information Technology

Department of Heavy Industry and Public Enterprises	Department of Industrial Policy & Promotion	Dr. M. ARIZ AHAMMED Department of Pharmaceuticals
Department of Science and Technology	31/3/2016 Department for Scientific & Industrial Research	Department of Space
Souwya 31/3/16 Indian Council of Medical Research		