

Report on Rapport Building Interaction with IIT Roorkee

Name of the Institute: Indian Institute of Technology, IIT Roorkee

Date of Interaction Visit: 19 February 2024

Name and Designation of BIS Nodal Officer: Madhurima Madhav

Sc. 'D'/Joint Director (NITS)

Details of Nodal Faculty/Standards Chair:

Name and Designation:	Prof (Dr) Deepak Khare BIS Chair Professor & Professor (HAG)
Department:	Department of Water Resources Development & Management
Contact Number & Email Id:	Indian Institute of Technology Roorkee, ROORKEE 247 667 Phone: (Office) +91+1332-295393 (Res.) +91+1332-285152 Cell: +91-9412990808 and +91-8979775124 Email: coordinator-bis@iitr.ac.in deepak.khare@wr.iitr.ac.in khareft@gmail.com

Key Personnel of Institute interacted with:

Name	Designation	Department	Contact Details
Prof Prakash Biswas	Head of Department	Chemical Department	head@ch.iitr.ac.in 01332-285217
Prof M. K. Pathak	Head of Department	Electrical Engineering Department	head@ee.iitr.ac.in 01332-284331
Prof. Thanga Raj Chelliah	Head of Department	Water Resources Development and Management Department	head@wr.iitr.ac.in 01332 285251
Prof. Nagendra P. Pathak	Head of Department	Electronics and Communication Engineering Department	nagppfec@iitr.ac.in 01332-285771 9897148429
Prof. B.S.S. Daniel	Head of Department	Metallurgical and Materials Engineering Department	head@mt.iitr.ac.in 01332-285606

Prof. Akshay Dvivedi	Dean (SRIC)	Sponsored Research & Industrial Consultancy	dsric@iitr.ac.in 01332-285245
Prof. Barjeev Tyagi	Dean (SW)	Students Welfare	dosw@iitr.ac.in 01332-285246
Dr V. C. Srivastava	Dean (IR)	International Relations	dean.ir@iitr.ac.in 9410372170
Shri Azam Ali Khan	CEO, TIDES	Technology Incubation and Entrepreneurship Development Society (TIDES)	ceo_tides@iitr.ac.in 9711190133

During the visit, the undersigned also had a meeting with the faculties who were in the process of submitting their proposals for R&D projects as well as the officers of iHUB DIVYASampark as their CEO was on tour.

Report:

Sl No.	Discussion Point	Remarks
1.	<p><i>Introduction of module/course on Standardization in curriculum</i></p> <p>(Propagating the idea of introduction of subjects on Standardization in modules/courses of key programmes in the following two formats:</p> <ul style="list-style-type: none"> i) Course on general aspects of standardization (IIT Roorkee model) ii) Department specific courses) <p>a) Has the institute shown interest (Yes/No)</p> <p>b) If Yes, details on further discussions:</p> <ul style="list-style-type: none"> i) Format of introduction (in the form of a course/special module/lecture series etc. ii) Key departments identified for introduction (indicating number and names of programmes identified) iii) Tentative timelines for implementation. 	<p>Course on general aspects of standardization have already been introduced by IIT Roorkee, details of which are available with SCMD. ISO/IEC Guide 59 and BIS' Standards Formulation Manual have been mentioned as the suggested books to be referred for the preparation of the course material. It was suggested to them to also include BIS Acts and Rules as the course curriculum contains aspects covered in them as well as the book, Standardization: a new discipline authored by Dr Lal C Verman.</p> <p>They were encouraged to explore the possibility of introducing department specific courses using the reference materials being shared by BIS from time to time.</p>

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2.	<p><i>R&D projects related to Standardization</i></p> <p>(Information to be shared on R&D guidelines and availability of ToRs on BIS portal, encouraging the institute for submission of proposals on areas of interest):</p> <p>a) Number and details of R&D proposals already submitted by the institute (Department –wise):</p> <p>b) Number and details of R&D proposals planned for submission (Department – wise):</p> <p>c) Any difficulties/challenges faced by the institute</p>	<p>They informed that they are in the process of submitting five proposals.</p> <p>The following concerns were raised by them:</p> <p>a) It was suggested that the time period of 6 months is too less considering the fact that a faculty, M. Tech. student or a PhD research scholar will not be able to fully devote their time to such projects involving lot of survey and visits, as their priorities would be different. Thus, for projects of this nature, they may have to engage Project Assistants, and engaging them itself as per the institute’s procedure requires minimum 2-3 months. Further, the hired staff will have to be trained, which will also require minimum 1 month.</p> <p>b) They also requested for a model filled-in proforma.</p> <p>c) Further, they suggested that MoU Institutes should also be allowed to recommend R&D Projects to be taken up by BIS along with their ToRs, which may be considered in the concerned technical committees for further necessary action.</p> <p>d) They also enquired whether BIS’ lab facilities may be availed by them for the purpose of testing samples drawn as part of R&D Projects awarded to them.</p>
3.	<p><i>Dissemination of information related to BIS activities and initiatives among faculty and research scholars</i></p> <p>(Institute to be sensitized on importance of dissemination of relevant information among its faculty and research scholars for their fruitful participation):</p> <p>a) How relevant information is being disseminated by the institute nodal officer</p>	<p>Through whatsapp group as well as email. Standards chair has the database of all faculties as well as research scholars. In addition, HoDs are requested to share the information with the students of their department.</p>

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	<p>b) Have the relevant reference handbooks/materials/information provided by BIS HQ reached at appropriate levels?</p> <p>c) Was the information shared w.r.t. following) Also indicating the response of the institute:</p> <p>i) Standardization contest on sustainability</p> <p>ii) Contest on IEC logo</p> <p>iii) Development of Reference Handbooks</p> <p>iv) Calendar of Lecture Series (Discipline wise)</p>	<p>Yes</p> <p>Yes, it was shared, and the students have shown their interest to participate in the contest, to the Chair Professor</p> <p>Yes, it was shared, however, there is no response from any one so far.</p> <p>Yes, it was shared, however, they showed their reluctance in submitting proposals for work of this nature. They suggested to consider giving the work to the various institutes based on their core areas, on nomination basis.</p> <p>Yes, they have shown interest in the lecture series and confirmed that faculties including students would be interested in joining and listening to the lectures of their interest.</p>
4.	<p><i>Database of faculty and research scholars</i></p> <p>(Details with their contact details as per Annex-1 to be obtained from institute):</p> <p>a) Total Number of Faculty at institute</p> <p>b) Number of faculty participating in Technical Committees of BIS</p> <p>c) Total Number of Research Scholars at institute</p>	<p>Data as on March 2023 which was shared by IIT Roorkee is provided as Annex 1A and Annex 1B. Standards Chair Professor has been requested to provide the latest data.</p>
5.	<p><i>Innovation center, start-up/incubation center at the institute</i></p> <p>a) Does such a setup exist at the institute (Yes/No)</p> <p>b) If Yes, details to be obtained as per Annex-2</p>	<p>Yes</p> <p>Details provided in Annex 2</p>

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6.	<p><i>Conducting department specific BIS related programs like Technical Committee meetings, seminars, workshops, special visits etc</i></p> <p>a) Number of departments willing to conduct such activities:</p> <p>b) Name of such departments (indicating the scope of work/research and key interest subject areas)</p> <p>c) Details of infrastructure available to conduct various BIS related programs indicating</p> <p>i) hall area, seating capacity, seating style etc</p> <p>ii) availability of facilities to host hybrid meetings</p>	<p>All the department heads who were met, showed their willingness to conduct joint workshops/seminars as well as committee meetings</p> <table border="1" data-bbox="831 450 1453 1912"> <tbody> <tr> <td data-bbox="831 450 1027 797">Electrical</td> <td data-bbox="1027 450 1453 797"> <ul style="list-style-type: none"> • Electric Vehicles • Power System Engineering • Electric Drives and Power Electronics • Instrumentation and Signal Processing • System and Control </td> </tr> <tr> <td data-bbox="831 797 1027 1137">Electronics</td> <td data-bbox="1027 797 1453 1137"> <ul style="list-style-type: none"> • RF and Microwave Engineering • Communication, Networks and Signal Processing • Microelectronics and VLSI Engineering • Smart Electronic Systems and Sensors </td> </tr> <tr> <td data-bbox="831 1137 1027 1256">Water Resources</td> <td data-bbox="1027 1137 1453 1256"> <ul style="list-style-type: none"> • Cyber-physical systems • Sustainable Water Management </td> </tr> <tr> <td data-bbox="831 1256 1027 1413">Metallurgy and Materials</td> <td data-bbox="1027 1256 1453 1413"> <ul style="list-style-type: none"> • Alloy Development • Metal-matrix composites • Bio-implants • Ceramic composites </td> </tr> <tr> <td data-bbox="831 1413 1027 1912">Chemical Engineering</td> <td data-bbox="1027 1413 1453 1912"> <ul style="list-style-type: none"> • Liquid and solid waste management • Sustainable energy • Energy storage • Process design and intensification, process modeling and simulation • Carbon capture • Biochemical and bioprocess engineering • Sustainable processing • Circular economy • Water treatment. </td> </tr> </tbody> </table> <p>IIT Roorkee has several types of halls with different seating capacities as well as the facility of hybrid meetings. Standards Chair Professor</p>	Electrical	<ul style="list-style-type: none"> • Electric Vehicles • Power System Engineering • Electric Drives and Power Electronics • Instrumentation and Signal Processing • System and Control 	Electronics	<ul style="list-style-type: none"> • RF and Microwave Engineering • Communication, Networks and Signal Processing • Microelectronics and VLSI Engineering • Smart Electronic Systems and Sensors 	Water Resources	<ul style="list-style-type: none"> • Cyber-physical systems • Sustainable Water Management 	Metallurgy and Materials	<ul style="list-style-type: none"> • Alloy Development • Metal-matrix composites • Bio-implants • Ceramic composites 	Chemical Engineering	<ul style="list-style-type: none"> • Liquid and solid waste management • Sustainable energy • Energy storage • Process design and intensification, process modeling and simulation • Carbon capture • Biochemical and bioprocess engineering • Sustainable processing • Circular economy • Water treatment.
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		confirmed that these can be utilized by BIS for various types of events
7.	<p><i>Standards Club Activities</i></p> <p>a) Number of Standards Clubs established and name of corresponding department</p> <p>b) Number of Standards Clubs planned for set up and name of corresponding department</p> <p>c) Whether BIS policy on Standards Club is shared with all HoDs of engineering/technical departments.</p>	<p>Nil</p> <p>They are in the process of creating five standards club in different departments.</p> <p>Yes</p>
8.	<p><i>Any other feedback/information</i></p>	<p>a) HoDs of IIT Roorkee suggested that presently, faculty and students are publishing their articles and papers at various international platforms like journals of various institutes. IRC also has a system of publishing work done in the areas of roads and highways in their journals and periodicals. On the same lines, BIS may consider creation of a portal for submitting papers/articles by the faculty and students. The portal may be such to receive submissions in a segregated manner, such as discipline wise, subject wise, etc. Subsequently, the work which is utilized in preparing/updating a standard should be suitably acknowledged in the standard.</p> <p>b) Dean (SRIC) has suggested that BIS may focus on TRL 8.0 or TRL 9.0 technologies at innovation hubs (iHUB and TIDES) which indicate that technologies have reached a level where industry is ready to collaborate. BIS may consider funding such technology providers for helping them in preparation of standards in those areas. Association with BIS may be utilized by the institute for better connect with industry. He has also suggested for a meeting in April end. He informed that currently there are 10 start-ups with Technology Innovation Hub (iHUB DivyaSampark) with market potential products.</p>

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		<p>c) CEO, TIDES has also suggested to collaborate with them in accelerator programmes for their start-ups. He has requested for a meeting in this regard.</p> <p>d) HoDs and Deans appreciated BIS' Grant in-aid scheme and suggested that MoU Institutes which create or augment their facility with funds from BIS should be recognized by them as Centre of Excellence for Testing those Products in the country.</p> <p>e) Prof Barjeev Tyagi, Dean (SW) suggested that information about BIS' internship scheme should be shared with Dean (Students Welfare) also, so that the information can be properly promulgated. He suggested that BIS may explore the ways of enhancing job opportunities for student interns, in the industries they visit during the course of their internship.</p> <p>Faculties of IIT Roorkee were encouraged to use BIS Website, particularly Academic Dashboard, as well as to listen to BIS Talks available on our website.</p> <p>They were also requested to encourage students to use our website, and read the reference materials shared by BIS on various subjects.</p> <p>They were also requested to actively participate in national and international standardization and suggest subjects of new areas which can be proposed by India at international level.</p> <p>Being the nodal officer, undersigned has already delivered a lecture in their Training Course for Civil Engineers of Minor Irrigation Works of Odisha on 13 January 2024, and also in Inter IIT Conclave organized by their students on 22 January 2024.</p>

Submitted by:

Madhurima Madhav

Sc. 'D'/JD (NITS)