



*A Govt. of India & Steel Industry Initiative*  
**SRTMI**

**Steel Research & Technology Mission of India**

## Background

The first R&D laboratory in steel sector was set up at Tata Iron & Steel Company (TISCO) in 1936. SAIL set up their Corporate R&D Centre in 1972 at Ranchi. R&D facilities in newer plants such as JSW and Essar Steel came much later in the beginning of 2000. To promote R&D in steel sector, GOI has also set up several National/Regional laboratories under CSIR such as National Metallurgical Laboratory (NML), Institute of Minerals and Materials Technology (IMMT). In addition, a number of reputed academic institutes such as IITs, NITs, IIST, PSG College, Jadavpur University, NIFFT etc. have been carrying out basic and applied research work in the area of iron and steel. In spite of all the efforts made over the years in this important core sector, barring some commendable work in the area of product development and incremental technology improvement programs related to raw material beneficiation and agglomeration, there have been no noteworthy contributions towards disruptive technology development or major national mission projects based on the need and aspiration of the nation.



## Why SRTMI ?

In order to augment R&D initiatives in steel sector, Government has intervened from time to time with funding schemes such as Steel Development Fund (SDF), Govt. Budgetary Support (GBS), Centre of Excellence (COE), Steel Chair Professors and Scholarships to M. Tech./Ph.D students. However, net benefit in terms of new innovations and development of disruptive technologies remain inadequate. To bridge this long felt need and to promote steel research on themes of critical and vital national importance, an institutional platform called “Steel Research & Technology Mission of India (SRTMI)” has been conceived and established. The SRTMI is a Registered Society with symbiotic relationship with Ministry of Steel (MoS). The Society has been constituted to fulfill the recommendations given by the Task Force on the terms of reference by MoS, Govt vide office order No.11(1)/2011-(TW Vol.II), dated 16-12-2013.

## Objectives

- Spearhead R&D of national importance in iron & steel
- Strengthen existing centers of R&D through creation of state-of-art facilities to conduct cutting-edge research and augment human resource
- Pursue and manage collaborations and synergy amongst industry, national R&D laboratories and academic institutes as per national objectives and aspirations
- Contribute towards creation of a globally competitive and sustainable steel industry on its own merits

## Scope & Broad Guidelines

- Develop appropriate technology for cost-effective production of quality steel with indigenous raw material, including utilization of low grade resources in an environment friendly manner
- Develop indigenous capabilities for design/engineering and equipment manufacturing for steel plants
- Evolve R&D programs of national importance, as per guidelines of SRTMI, covering all areas from ore to products, including energy, environment and design
- To facilitate establishment of international benchmarks and best practices
- To step up R&D investments for the steel sector to 1% of turnover in a phased manner
- Augment human resource development to facilitate R&D programs of national importance
- Collaborate and seek technical support/services from other organizations in India or abroad, as per perceived needs and aspirations of the Indian steel industry
- Create national “Institutes on Steel Technology” to promote post graduate programs and research in steel technology
- Promote a model for industry – R&D organization – academia collaboration for promotion of innovations, cutting-edge research and partnership in India and abroad.



## Functioning of SRTMI

The Society shall function under the guidance and leadership of the Governing Board. The Apex level authority shall vest with the Governing Board, which comprises a Chairman, members and Secretary. Members of the Governing Board, including the Chairman, shall have a tenure of 3 years. The constituted composition of the Governing Board of SRTMI is as follows :

<b>Chairman</b>	:	Shri P. K. Singh, Chairman, SAIL
<b>Members</b>	:	Shri Sajjan Jindal, Chairman, JSW Shri P. Madhusudan, CMD, RINL Shri T. V. Narendran, MD, Tata Steel Shri Naveen Jindal, Chairman, JSPL Shri A. K. Tyagi, CMD, MECON Smt. Bharathi S. Sihag, CMD, NMDC Shri Sunil Barthwal, Jt. Secretary, Ministry of Steel Dr. Baldev Raj, Director, National Institute of Advanced Studies Dr. Sanak Mishra, Secretary General, Indian Steel Association Prof. Indranil Manna, Director, IIT Kanpur Prof. B. K. Mishra, Director, CSIR-IMMT
<b>Actg. Director, SRTMI &amp; Member Secretary</b>	:	Shri. S. S. Mohanty, Director (Tech.), SAIL

The Governing Board shall provide guidance to SRTMI in matters of selection of projects. All proposals for funding of national R&D projects will be placed before the Governing Board for approval. The Governing Board shall also decide on strengthening of existing R&D infrastructure in the country and even creating new facilities and institutes as per the need. In addition to the above, the Governing Body shall fulfill the following functions :

- Review progress and performance of SRTMI
- Give policy decision to SRTMI
- Approve Annual Report and half yearly/yearly accounts of SRTMI

The day-to-day coordination, monitoring and review of projects shall be done by a competent team of technologists, scientists and experts headed by Director, SRTMI. For R&D projects, each project will be headed by an outstanding Project Manager/ Assoc. Director reporting directly to the Director. The Project Managers/Assoc. Directors in turn, shall be backed by a team of qualified scientists/technologists/engineers. The Director, as per need, is free to set up Technical Committees/Groups to advise him or her in discharging responsibility.



## Project Selection

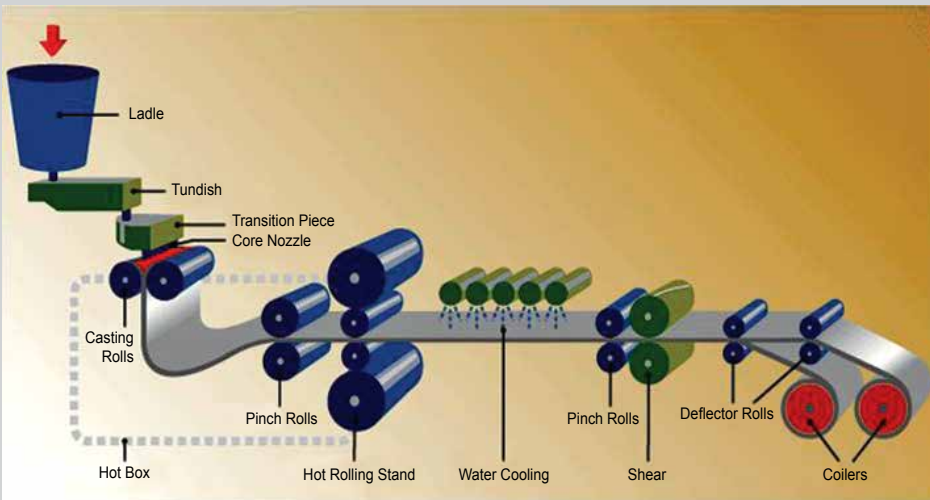


SRTMI team along with domain experts shall prioritise areas of national importance and Director, SRTMI will take approval of the Governing Board of SRTMI on one/two areas of immediate priority. Based on the decision, one of the industries takes a lead role to prepare a detailed project proposal involving project planning, assessment and identification of resources for deployment, implementation strategies, design and manufacturing requirements etc. The prime mover shall take the help of a strategic group consisting of experts from member industries & domain experts from academia and research institutions within India and abroad.

The detailed project proposals shall be submitted to Secretary, Governing Board who shall convene a Governing Board meeting to examine and approve the project. The national mission projects shall have atleast one/two industry members as leaders/promoters alongwith a competent team of experts from academic institutes, design organizations and R&D organizations as members. All the developments/

outputs of SRTMI projects shall be shared by member industries. SRTMI shall evolve a suitable mechanism for taking care of the IPR issues and sharing of developments by the members.

Most of the national mission projects shall require fundamental understanding of the subject before it is carried forward for prototype development and upscaling for industrial scale commercial applications. Thus, a two stage approach involving fundamental research, lab scale concept development in the first stage and pilot scale/prototype development for proof of concept, evaluation of process dynamics and upscaling for commercial scale operations in the second stage may be contemplated.



## Priority Areas of National Importance

The following areas may be considered for identification and selection of projects of national importance. Areas mentioned are not exhaustive, but indicative only.

### 1. Best usage of raw materials and conservation of natural resources.

- Technologies to maximize recoveries from low grade ores by novel methods
- Technologies for recovering iron content from slimes and finding alternate use of slimes
- Use of high ash non coking coals for coke making

### 2. Energy & Environment

- Development of optimum energy consumption and emissions for each of the steelmaking processes
- Technology to produce synthetic coke
- Technologies for heat recovery from blast furnace and steel slags
- Carbon dioxide sequestration and reduction in emission levels

### 3. Augment design and manufacturing capabilities

- Indigenous development of main operating unit of higher capacities
- Regenerative burners for reheat furnaces

### 4. Product development of strategic and national importance

### 5. Expertise build up in academic institutes and industry through creation of human ecosystem to foster steel research of national relevance.

## Funding Mechanism for SRTMI

- Rs. 100 crores will be contributed by participating industries and MoS will provide a matching amount to kick-start the process.
- All participating organizations to pay a yearly contribution to meet the recurring expenses
- Cost of individual projects will be borne by participating companies/organizations on a case-to-case basis. Funding mechanism and contributions by the lead and participating organizations will be worked out by the Governing Board.

## Office & Address of SRTMI

The office of SRTMI is presently situated in SAIL Corporate Office, Lodi Road, New Delhi. Search for a suitable location for its registered office in Delhi is in progress, and shall be finalized in the near future.

## SRTMI Secretariat

Shri S.S. Mohanty, Director (Tech.), SAIL is looking after the functions of Member Secretary, Governing Board and Acting Director, SRTMI. All correspondence related to SRTMI may be addressed to:

**Shri S. S. Mohanty**

Member Secretary, Governing Board & Actg. Director, SRTMI

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