

i-PSG

Meeting held during October 26-27, 2021

Minutes of i-PSG meeting

October 26-27, 2021

The virtual i-PSG project review meeting was held during October 26-27, 2021 on MS Team platform followed by closed-door i-PSG committee meeting on October 29, 2021, in the Committee Room No.-1. The agenda of the review meeting was: (i) Presentation of new, on-going and completed projects in the area of Thematic Research, Technology Development and Scholastic Research (ii) Feedbacks, discussion and evaluation.

The decisions/observations/comments/required actions are summarized in Annexure – I. The PLs, Co-PLs and Team Members of all the projects are required to take necessary action according to the comments/decision of the i-PSG committee. The project completion reports should be submitted to Ms. Beena Kumari (beena@nmlindia.org) with a copy to i-PSG (ipsag@nmlindia.org).

The i-PSG committee recommends that the Project Leaders of all the successfully completed Thematic and Technology Development projects should approach external agencies for funding.

Ms. Y. Usha (Member)

Y Usha
11/11/2021

Dr. T.C. Alex (Member) *on leave*

Dr. Mainak Ghosh (Member)

M Ghosh
11/11/21

Dr. Beena Kumari (Member) *on leave*

Dr. V. C. Srivastava
(Convener)

V C Srivastava
11/11/2021

Dr. S.K. Tiwary (Member)

S K Tiwary

Dr. D. Mishra (Member)

D Mishra

Mr. A.K. Swain (Member)

A K Swain

Dr. G. K. Mandal
(Co-convener)

G K Mandal
11/11/2021

Chatterjee
Chairman, i-PSG

[A] Thematic Research Project: Completed, On-going and New Proposals

Sl. No.	Project No.	Title of the project	Start date	End date	PL	i-PSG Comments / Decisions
1.	OLP-0382	Effect of deformation induced martensite and dislocations density on the hydrogen permeation and hydrogen embrittlement of austenitic steels	16-10-20	15-03-22	G. Sudhakar Rao	<p>Decision: <i>Technical:</i> The project leader is advised to discuss the already available results with the Chairman (i-PSG). The project is extended for 5 months. <i>Financial:</i> The approved fund (balance amount) shall be carried forward.</p> <p style="text-align: right;">Extended for 5 months</p>
2.	OLP-0383	Discerning the individual and synergistic effect of carbide inhibitors on austenite retention and stability in medium manganese advanced high strength steels	16-10-20	15-10-21	Avanish K. Chandan	<p>Decision: <i>Technical:</i> The project is completed with good conclusions. The project leader is advised to seek external sponsorship for further extension of the work. The project completion report to be submitted before December 15, 2021.</p> <p style="text-align: right;">Completed</p>
3.	OLP-0384	Neural network-based sensitivity analysis and performance optimization of carbon recovery from Blastfurnace and Corex plant sludge of JSW Steel plant using froth flotation - A step towards Waste-to-Wealth management	16-10-20	15-10-21	Ajita Kumari	<p>Decision: <i>Technical:</i> The project is completed. The project leader should seek sponsorship from JSW, if any possible. The project completion report to be submitted before January 31, 2022.</p> <p style="text-align: right;">Completed</p>
4.	OLP-0385	Understanding the phenomenon and enhancement of anti-icing properties of HVOF deposited coating	16-10-20	15-01-22	Paritosh Dubey	<p>Decision: <i>Technical:</i> The project is extended for 3 months for the completion of the work on anti-icing experiments. The project leader is advised to explore the patentability of the results. <i>Financial:</i> The approved fund (balance amount) shall be carried forward.</p> <p style="text-align: right;">Extended for 3 months</p>

Signature

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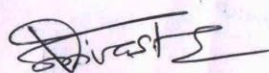
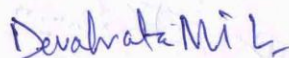
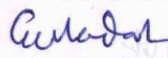
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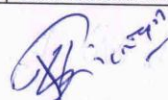
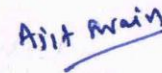
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Ajit Anand

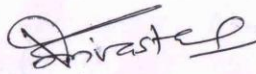
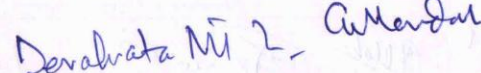
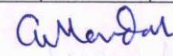


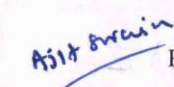
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5.	OLP-0374	Characterization of microbubbles and its subsequent application in fine particle separation	01-06-20	31-03-22	Kumari Ruby	<p>Decision: Technical: The project is extended for 6 months to complete the work related to separation of particles by microbubbles and studying the mechanism of separation. Mandays: K. Hembrom: 15 days (for the extended period) Financial: The approved fund (balance amount) shall be carried forward.</p> <p style="text-align: right;">Extended for 6 months</p>
6.	OLP-0388	Study of Amorphous magnetic alloy flakes for Microwave Absorbing Materials (2-18 GHz): Tuning magnetic permeability through flake microstructure and Morphology	01-06-21	31-03-22	M. Premkumar	<p>Decision: Technical: The progress of the project is satisfactory. The project is extended up to 31.03.2022. Financial: The approved fund (balance amount) shall be carried forward.</p> <p style="text-align: right;">Extended for 4 months</p>
7.	OLP-0389	Numerical modelling of heat transfer and fluid flow in Selective Laser Melting (SLM) of SS316L	01-06-21	31-03-22	Y. Usha	<p>Decision: Technical: The progress of the project is satisfactory. Financial: The approved fund (balance amount) shall be carried forward.</p> <p style="text-align: right;">On-going</p>
8.	OLP-0392	Multi physics and heat treatment simulation of additive manufacturing process for property prediction of SS316L	01-06-21	31-03-22	M. Madan	<p>Decision: Technical: The progress of the project is satisfactory. However, the project members need to put more effort to establish a strong foundation for their models and also explore the possibilities to integrate their results with those obtained in OLP-0389. Financial: The approved fund (balance amount) shall be carried forward.</p> <p style="text-align: right;">On-going</p>
9.	OLP-0395 (New Project)	Decarburization of high carbon ferroalloys by CO ₂ treatment	01-11-21	30-09-22	A. Ammasi	<p>Decision: Technical: The proposal is accepted. Mandays: AA: 40 days; MM: 12 days; KA: 12 days; KK: 12 days; DPS: 16 days; NH: 16 days; ST: 16 days; MKT: 16 days Financial: Cont./Consum.: 2.50 L; TA/DA: 0.30 L; Fab./Outsourcing: 2.50 L</p>


						<i>Mentor:</i> Dr. J. Pal Approved
10.	OLP-0396 (New Project)	Production of iron powder/iron nugget from industrial waste by the process of segregation roasting	01-11-21	30-04-22	M. Bhattacharya	Decision: <i>Technical:</i> The proposal is accepted. The duration of the project will be 6 months. An extension can be considered after reviewing the progress after six months. <i>Mandays:</i> MB: 25 days; SD: 5 days; DCS: 8 days; AA: 8 days; KA: 8 days <i>Financial:</i> Cont./Consum.: 0.50 L; TA/DA: 0.30 L <i>Mentor:</i> Dr. K. K. Sahu Approved
11.	OLP-0398 (New Project)	Processing of glassy metal powders through gas atomization for additive manufacturing and coating applications	01-11-21	30-09-22	Rajat Roy	Decision: <i>Technical:</i> The proposal is accepted in principle. The scope of the project will be limited to characterization of GFA of developed alloys, powder production through gas atomization and additive manufacturing of amorphous/glassy component followed by relevant characterization. <i>Mandays:</i> RKR: 20 days; MP: 10 days; GKB: 15 days; AKP: 10 days; KGK: 5 days <i>Financial:</i> Cont./Consum.: 1.25 L; TA/DA: 0.30 L; Equip Usg. (ext.): 2.0 L <i>Mentor:</i> Dr. L. C. Pathak Approved
12.	New Proposal	Extraction and separation of rare earth elements through porous silica-grafted ligands	---	---	Rajen Kundu	Decision: <i>Technical:</i> The proposal is accepted in principle. However, the project can commence only after establishing/confirming the availability or content of Ce, La and Nd in the source material i.e. coal ash. <i>Mentor:</i> Dr. Sanchita Chakravarty Approval deferred
13.	OLP-0399 (New Project)	Enhancement of molten salt corrosion resistance of thermal energy storage materials in concentrated solar power plant through doping inhibitors	01-11-21	30-09-22	S. K. Pradhan	Decision: <i>Technical:</i> The proposal is accepted. <i>Mandays:</i> SKP: 50 days; LKM: 15 days; NH: 10 days <i>Financial:</i> Cont./Consum.: 3.00 L; TA/DA: 0.30 L; Equip Usg. (ext.): 1.0 L; New equipment: 5.0 L <i>Mentor:</i> Dr. Raghbir Singh Approved







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14.	New Proposal	Oxidation and hot corrosion behaviour studies of AMed Inconel 625 & Inconel 718 alloys	---	---	S. Paswan	<p>Decision: Technical: The proposal seems to lack in proper identification of application areas of AMed IN625 and IN718. The proposed work can be undertaken provided the investigator comes up with suitable application for the utilization of the results of the proposed work. Mentor: Dr. Raghubir Singh</p> <p style="text-align: right;">Approval pending</p>
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[B]Technology Development Project: Completed, On-going and New Proposals

Sl. No	Project No.	Title of the project	Start date	End date	PL	i-PSG Comments / Decisions
15.	OLP-0369	Scaling up of the process for production of iron powder from waste iron oxide fines / slimes using hydrogen gas /natural gas	16-10-19	31-03-22	D. C. Sau	<p>Decision: Technical: The project was on hold up to 15.07.2021. As the project leader would be able to establish the experimental facilities by 15.11.2021, the project will resume from this date. The PL is advised to complete the remaining work elements by 31.03.2022. Financial: The approved fund (balance amount) shall be carried forward.</p> <p style="text-align: right;">On-going</p>
16.	OLP-0372	Development of melting-casting facilities and optimization of melting and casting parameters for 3 rd generation Al-Li alloys	01-12-19	31-03-22	A. P. Murugesan	<p>Decision: Technical: The progress of the project is satisfactory. Financial: The approved fund (balance amount) shall be carried forward.</p> <p style="text-align: right;">On-going</p>
17.	OLP-0393	Investigations on the NML'S retort technology for magnesium metal production	01-06-21	31-03-22	Krishna Kumar	<p>Decision: Technical: The progress of the project is satisfactory. Financial: The approved fund (balance amount) shall be carried forward.</p> <p style="text-align: right;">On-going</p>
18.	OLP-0401 (New Project)	Investigate NML developed furnace compatibility with IIP bio-pellets	01-11-21	30-04-22	R. B. Meshram	<p>Decision: Technical: The proposal is accepted. Mandays: RBM: 30 days; NH: 20 days; YU: 10 days; HM: 15 days Financial: Cont./Consum.: 2.5 L</p>

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Devalnata Mi 2 Anandan

P. Lakshmi

R. K. Srinivasan

Ajit

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						Approved
19.	New proposal	Upscaling of an energy efficient process for the recovery of metal values from spent NdFeB magnets	---	---	S. K. Sahu	Decision: Technical: The proposal is accepted for scale up to 5 kg scale. However, the leader of the project will be Dr. Aarti Kumari. A revised proposal should be submitted, accordingly.
						Approval pending
20.	OLP-0397 (New Project)	Feasibility study on producing DRI from lumps by using hydrogen	01-11-21	30-09-22	M. Madan	Decision: Technical: The proposal is accepted. Mandays: MM: 30 days; AA: 14 days; KA: 14 days; KK: 14 days; ST: 20 days Financial: Cont./Consum.: 2.00 L; TA/DA: 0.25 L; Fab./Outsourcing: To be arranged from other sources.
						Approved
21.	OLP-0400 (New Project)	Development of a hybrid centrifugal separator for application in mineral processing	01-11-21	30-09-22	Sunati Mohanty	Decision: Technical: The proposal is accepted. The deliverable of the proposed work would be the complete system of hydrocyclone with magnetic separator. Mandays: SM: 50 days; MM: 20 days; AKS: 20 days Financial: Cont./Consum.: 1.00 L; Fab./Outsourcing: 4.0 L
						Approved

[C] Scholastic Project: Completed, On-going and New Proposals

Sl. No.	Project No.	Title of the project	Start date	End date	Project Leader	i-PSG Comments / Decisions
22.	OLP-0352	High Temperature Crack Growth of Cr-Mo Steels (Module-III)	16-10-20	15-10-21	C. V. Singh	Decision: Technical: The project is completed. The project completion report to be submitted before December 15, 2021. The results could not be presented during the meeting. The PL will present his work during the next i-PSG meeting in April 2021.
						Completed
23.	OLP-0353	Development of Functionalized MOF and its composites for the	16-10-20	31-03-22	Shivendra Sinha	Decision:

Navabrata Mishra - Completed

Prakash Kishore

Ajit Mishra

		adsorption of light rare earths from effluent/dilute leach solution: Dynamic filtration studies with mass transfer modelling (Module-III)				<p>Technical: The request for the extension has been considered keeping in view the delays associated with the regulations imposed during the Covid pandemic. The project is extended for 5 months to complete the remaining work elements.</p> <p>Mandays and Financial: 'No Mandays' and 'No Fund' for the extended period.</p> <p style="text-align: right;">Extended for 5 months</p>
24.	OLP-0354	Study of structure-property correlations of inorganic - organic hybrid geopolymers (Module-III)	16-10-20	15-10-21	Rashmi Singla	<p>Decision:</p> <p>Technical: The project is completed. The project completion report to be submitted before December 15, 2021.</p> <p style="text-align: right;">Completed</p>
25.	OLP-0355	Studies on the physico-chemical behavior of mixture of amine (pri, sec, ter and quart amines) and organophosphoric compounds (Phosphoric, phosphonic and phosphinic acids) for the solvent extraction and separation of Li, Co, Ni and Mn (Module-III)	16-10-20	15-10-21	Swati Pramanik	<p>Decision:</p> <p>Technical: The project is completed. The project completion report to be submitted before December 15, 2021.</p> <p style="text-align: right;">Completed</p>
26.	OLP-0345	Development of Low Carbon Bainitic Steels (Module-III)	01-06-20	30-05-21	Gaurav Kr. Bansal	<p>Decision:</p> <p>Technical: The project is completed. The project completion report to be submitted before December 15, 2021.</p> <p style="text-align: right;">Completed</p>
27.	OLP-0387	Extraction and recovery of copper from lean grade chalcopyrite	16-10-20	15-10-21	Rajanikant Choudhari	<p>Decision:</p> <p>Technical: The project is completed. The project completion report to be submitted before December 15, 2021.</p> <p style="text-align: right;">Completed</p>
28.	OLP-0386 (New project)	Behaviour of mold flux for high Al steels during continuous casting process (Module II)	16-10-21	15-10-22	Bhupendra Kumhare	<p>Decision:</p> <p>Technical: The progress of Module-I is satisfactory. The proposal for Module-II is accepted.</p> <p>Financial: Cont./Consum.: 2.50 L; TA/DA: 0.20 L; Fab./Outsourcing: 1.10 L; Equip usg. (ext.): 1.23 L</p> <p style="text-align: right;">Approved</p>

Dr. Praveen

Devalrata Ni L. Gaudal

P. Mohan Prasad

Asit Prasad

29.	OLP-0402 (New Project)	Development of electromagnetic sensor for real time health monitoring of structural components exposed to high-temperature (above 600°C) (Module-I)	01-11-21	30-09-22	Chandan Datta	Decision: Technical: The proposal for Module-I is accepted. Financial: Not applicable Approved
30.	OLP-0403 (New Project)	A study on hydrodynamics characteristics in separation of minerals in a monolithic flotation column (Module-I)	01-11-21	30-09-22	K. Hembrom	Decision: Technical: The proposal for Module-I is accepted. Mandays: KH: 45 days Financial: Cont./Consum.: 1.60 L; Fab./Outsourcing: 0.80 L; TA/DA: 0.30 L Approved
31.	OLP-0404 (New Project)	Flow Accelerated Pipeline Corrosion: Probing the FAC mechanisms of API 5L grade steels through gravimetric and different electrochemical techniques (Module-I)	01-11-21	30-09-22	L. K. Meena	Decision: Technical: The proposal for Module-I is accepted. Mandays: LKM: 10 days Financial: Cont./Consum.: 1.50 L; Fab./Outsourcing: 3.0 L; TA/DA: 0.30 L; Equip usg. (ext.): 0.75 L (<i>on the condition that equipment is not available/not working at NML</i>) Approved
32.	OLP-0405 (New Project)	Evaluation of mechanical properties across fusion boundaries of dissimilar metal welds materials using ball indentation technique and correlate with microstructural characteristic (Module-I)	01-11-21	30-09-22	Mousumi Das	Decision: Technical: The proposal for Module-I is accepted. Financial: Not applicable Approved
33.	OLP-0361	Development of high efficiency Tin Selenide based Thermoelectric and optically tunable coatings for alternative energy harvesting from different industrial applications (Module-III)	01-06-21	31-03-22	Komal Singh	Decision: Technical: The progress report has been submitted and found satisfactory. Financial: The approved fund (balance amount) shall be carried forward. On-going
34.	OLP-0378	Characterization, beneficiation and coke formation studies on low volatile coking coal for metallurgical utility (Module-II)	01-06-21	31-03-22	Mohan Rao Andavarapu	Decision: Technical: The progress report has been submitted and found satisfactory. Financial: The approved fund (balance amount) shall be carried forward.

Divastap

Devabrata Mishra - Amadon

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35.	OLP-0379	Determining the process route parameters of the formation of stable Face Centred Cubic Titanium (Module- II)	01-06-21	31-03-22	Vaibhav Gaur	Decision: Technical: The progress report has been submitted and found satisfactory. Financial: The approved fund (balance amount) shall be carried forward.	On-going
36.	OLP-0380	Precipitation hardened compositionally complex Ni-based alloys aided with HDI strengthening (Module-II)	01-06-21	31-03-22	Shubhada Kar	Decision: Technical: The progress report has been submitted and found satisfactory. Financial: The approved fund (balance amount) shall be carried forward.	On-going
37.	OLP-0390	Mitigation of galvanizability of steel surface through adoption of sol-gel pre-coating and improvement in corrosion resistance of galvanizing coating through post intercalated ion conversion method (Module I)	01-06-21	31-03-22	M. Walunj	Decision: Technical: The progress report has been submitted and found satisfactory. Financial: The approved fund (balance amount) shall be carried forward.	On-going
38.	OLP-0391	Designing of a magneto-plasmonic grapheme material and its multimodal application in catalysis (Module I)	01-06-21	31-03-22	Sudeshana Das Chakravarty	Decision: Technical: The progress report has been submitted and found satisfactory. Financial: The approved fund (balance amount) shall be carried forward.	On-going
39.	OLP-0394	Synthesis and Development of Al-Si-Cu-N Nanocomposite Coatings for Antibacterial Applications	01-06-21	31-03-22	Shweta Ghosh	Decision: The project leader has left the organisation. Therefore, the project is closed at this stage.	Closed

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Devakata Nil - Curator

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Ajit Swain

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