

Minutes of i-PSG meeting

April 07-08, 2022

The virtual i-PSG project review meeting was held during April 07-08, 2022 on MS Team platform followed by closed-door i-PSG committee meeting on April 13, 2022, 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, Scholastic Research and Infrastructure Development (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 (ipsg@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.

Also, a separate meeting will be convened by i-PSG to assess the preparedness and long term goals of CSIR-NML in additive manufacturing area, where PLs of completed and on-going projects in the area will present their work as well as future plans so as to consolidate all the activities within one umbrella.

Ms. Y. Usha (Member) *on leave*

Dr. T.C. Alex (Member) *TCA*

Dr. Mainak Ghosh (Member) *MG*

Dr. Beena Kumari (Member) *Beena*

Dr. V. C. Srivastava
(Convener) *VCS*

Dr. S.K. Tiwary (Member) *S.K. Tiwary*

Dr. D. Mishra (Member) *D. Mishra*

Dr. R.K. Singh (Member) *R.K. Singh*

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

Chairman, i-PSG

Chatterjee
25/4/22

Annexure-I

[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	15-05-22	G. Sudhakar Rao	Decision: Technical: The project is extended for 2 months, without additional funding and mandays, to complete the remaining characterisation work. Extended for 2 months
2.	OLP-0385	Understanding the phenomenon and enhancement of anti-icing properties of HVOF deposited coating	16-10-20	15-01-22	Paritosh Dubey	Decision: Technical: The project team has completed this good work satisfactorily. The project completion report to be submitted before May 31, 2022. Completed
3.	OLP-0374	Characterization of microbubbles and its subsequent application in fine particle separation	01-06-20	31-03-22	Kumari Ruby	Decision: Technical: The project is completed. The PL is advised to discuss the results with the experts in the area for possible implementation and better understanding. The project completion report to be submitted before May 31, 2022. Completed
4.	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	Decision: Technical: The project is completed satisfactorily. The project completion report to be submitted before May 31, 2022. Completed

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10.	OLP-0406	Extraction and separation of rare earth elements through porous silica-grafted ligands	01-11-21	30-09-22	Rajen Kundu	<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>
11.	OLP-0399	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	<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>
12.	OLP-0407	Oxidation and hot corrosion behaviour studies of AMed Inconel 625 & Inconel 718 alloys	01-11-21	30-09-22	S. Paswan	<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>
14.	OLP-0410 (New project)	Low-Temperature (<100 °C) Glow Discharge Plasma Nitriding of Aluminum/Aluminum Alloys	14-04-22	31-03-23	Paritosh Dubey	<p>Decision: Technical: The proposal is accepted. Mandays: PD: 45 days; JC: 05 days Financial: Cont./Consum.: 1.00L; Fab./Outsourcing : 0.20 L; New equipment: 1.00 L Mentor: Dr. S. Palit Sagar</p> <p style="text-align: right;">Approved</p>
15.	OLP-0411 (New project)	Low cycle fatigue behaviour of an additively manufactured Ni-base superalloy IN-625	14-04-22	31-03-23	C. V. Singh	<p>Decision: Technical: The proposal is accepted. The project team is advised to first explore the possibility of collaboration with external agencies for making the test coupons, before getting it printed on payment basis. Mandays: CVS: 50 days; SB: 20 days; BKS: 20 days Financial: Cont./Consum.: 3.00 L; TA/DA: 0.30 L Mentor: Dr. S. Sivaprasad</p>

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16.	OLP-0412 (New project)	Influence of precipitation on the threshold intensity factor for environmental assisted cracking of AA 5083-H111	14.04.22	31-03-23	G. Sudhakar Rao	<p style="text-align: right;">Approved</p> <p>Decision: Technical: The proposal is accepted. Mandays: GSR: 46 days; LKM: 03 days Financial: Cont./Consum.:1.80 L; TA/DA: 0.30 L; Fab./Outsourcing : 1.80 L Mentor: Dr. Raghubir Singh</p> <p style="text-align: right;">Approved</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
17.	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	30-06-22	D. C. Sau	<p>Decision: Technical: The project is extended for 3 months to complete the remaining work, which is due after revival of the experimental setup. Financial: The approved fund (balance amount) shall be carried forward.</p> <p style="text-align: right;">Extended for 3 months</p>
18.	OLP-0372	Development of melting-casting facilities and optimization of melting and casting parameters for 3 rd generation Al-Li alloys	01-12-19	30-09-22	A. P. Murugesan	<p>Decision: Technical: The project is extended for 6 months to complete the casting of 3rd generation Al-Li alloys on newly installed furnace and characterisation thereof. In process loss of Li should be studied in detail. Financial: The approved fund (balance amount) shall be carried forward.</p> <p style="text-align: right;">Extended for 6 months</p>
19.	OLP-0393	Investigations on the NML'S retort technology for magnesium metal production	01-06-21	30-09-22	Krishna Kumar	<p>Decision: Technical: The project is extended for 6 months to complete the remaining work. The PL is advised to have a detailed discussion with Dr. K K Sahu to decide on the best course of further experimentation. The project team would arrange a</p>

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20.	OLP-0401	Investigate NML developed furnace compatibility with IIP bio-pellets	01-11-21	30-04-22	R. B. Meshram	<p>Decision: Technical: The project is completed satisfactorily. The project completion report to be submitted before May 31, 2022.</p> <p style="text-align: right;">Completed</p>
21.	OLP-0408	Upscalling of an energy efficient process for the recovery of metal values from spent NdFeB magnets	01-11-21	30-09-22	N. S. Randhwa	<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>
22.	OLP-0397	Feasibility study on producing DRI from lumps by using hydrogen	01-11-21	30-09-22	M. Madan	<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>
23.	OLP-0400	Development of a hybrid centrifugal separator for application in mineral processing	01-11-21	30-09-22	Sunati Mohanty	<p>Decision: Technical: The progress of the project is satisfactory. The issue of fluid flow disturbances (under two force fields) due to externally applied magnetic field should be studied in entirety before commencing full-fledged experimentation. Financial: The approved fund (balance amount) shall be carried forward.</p> <p style="text-align: right;">On-going</p>

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13.	OLP-0413 (New project)	Design and development of an in-house barrel electroplating system for coating Mg- based biodegradable implants	14-04-22	13-10-22	Roshan Kumar	Decision: Technical: The proposal is accepted. Mandays: RK: 30 days; MK: 20 days; PK: 20 days; AJK: 05 days. Financial: Cont./Consum.: 0.25 L Mentor: Dr. S. K. Tiwari
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[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
24.	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 May 31, 2022. Completed
25.	OLP-0353	Development of Functionalized MOF and its composites for the adsorption of light rare earths from effluent/dilute leach solution: Dynamic filtration studies with mass transfer modelling (Module-III)	16-10-20	31-03-22	Shivendra Sinha	Decision: Technical: The project is completed. The project completion report to be submitted before May 31, 2022. Completed
26.	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	30-09-22	Komal Singh	Decision: Technical: The request for the extension has been considered keeping in view the delays associated with the Covid regulations last year. The project is extended for 6 months to complete the remaining work elements. Mandays and Financial: 'No Fund' for the extended period. Extended for 6 months
27.	OLP-0378	Characterization, beneficiation and coke formation studies on low volatile coking coal for metallurgical utility (Module-III)	01-04-22	31-03-23	Mohan Rao Andavarapu	Decision: Technical: The committee found the lack of focus in execution of Module-II. The PL is directed to

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						<p>discuss with Dr. T C Alex and Dr. R K Rath the technical aspects of the project for further execution. The outcome of the discussion and statement from the mentors to be submitted to i-PSG before May 05, 2022. The work need effective mentoring and supervision. Mandays: MAA: 50 days Financial: Cont./Consum.: 0.50 L; TA/DA: 0.30 L</p> <p style="text-align: right;">Provisionally approved</p>
28.	OLP-0379	Determining the process route parameters of the formation of stable Face Centred Cubic Titanium (Module- III)	01-04-22	31-03-23	Vaibhav Gaur	<p>Decision: Technical: The progress of Module-II is satisfactory. The proposal for Module-III is accepted. However, the committee recommends the PL to evolve a better understanding of the research problem, which was not reflected during the presentation of Module-II report. Also, the project requires better supervision and guidance. Financial: Cont./Consum.: 1.50 L; TA/DA: 0.30 L; Equip Usg. (ext.): 0.54 L</p> <p style="text-align: right;">Approved</p>
29.	OLP-0380	Precipitation hardened compositionally complex Ni-based alloys aided with HDI strengthening (Module-III)	01-04-22	31-03-23	Shubhada Kar	<p>Decision: Technical: The progress of Module-II is satisfactory. The proposal for Module-III is accepted. Financial: Cont./Consum.: 0.50 L; TA/DA: 0.30 L; Fab./Outsourcing: 0.30 L</p> <p style="text-align: right;">Approved</p>
30.	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	<p>Decision: The report could not be presented due to unavailability of the PL. The presentation will be made in the next i-PSG meeting.</p>
31.	OLP-0391	Designing of a magneto-plasmonic grapheme material and its multimodal application in catalysis (Module II)	01-04-21	31-03-23	Sudeshana Das Chakravarty	<p>Decision:</p>

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AD *Sudeshana Das* *Chakravarty* *Page 8 of 11* *R. Singh*

						<p>Technical: The progress of Module-I is satisfactory. The proposal for Module-II is accepted.</p> <p>Financial: Not Applicable</p> <p style="text-align: right;">Approved</p>
32.	OLP-0414 (New project)	Beneficiation of lepidolite bearing pegmatite/aplite for lithium minerals concentrate (Module-I)	14-04-22	31-03-23	S. K. Sahoo	<p>Decision:</p> <p>Technical: The proposal for Module-I is accepted. The PL is advised to have different work elements vis-à-vis CSIR sponsored projects HCP-28 (WP1)</p> <p>Financial: Not Applicable</p> <p style="text-align: right;">Approved</p>
33.	OLP-0415 (New project)	Near net shape 3D manufacturing of Inconel 718 by optimizing controlled parameters of wire arc additive manufacturing with Cold metal transfer process (Module-I)	14-04-22	31-03-23	Nimai Haldar	<p>Decision:</p> <p>Technical: The proposal for Module-I is accepted.</p> <p>Mandays: NH: 20 days</p> <p>Financial: Cont./Consum.: 2.50 L; Fab./Outsourcing: 0.50 L; TA/DA: 0.20 L</p> <p style="text-align: right;">Approved</p>
34.	OLP-0416 (New project)	In-depth study of interfacial conditions during early stages of pearlitic transformation in multicomponent high carbon steels (Module-I)	14-04-22	31-03-23	Vikas Kumar Sahu	<p>Decision:</p> <p>Technical: The proposal for Module-I is accepted. The PL is advised to have a clear demarcation between the proposed work and the work already carried out at CSIR-NML in this direction.</p> <p>Financial: Fab./Outsourcing: 1.00 L; Equip Usg. (ext.): <u>To be decided later</u></p> <p style="text-align: right;">Approved</p>
35.	OLP-0417 (New project)	Ratcheting fatigue behavior of welded Inconel 740H nickel-based superalloy under asymmetric cyclic loading (Module-I)	14-04-22	31-03-23	Rupendra Singh Rajput	<p>Decision:</p> <p>Technical: The proposal for Module-I is accepted.</p> <p>Financial: Not Applicable</p> <p style="text-align: right;">Approved</p>
36.	OLP-0418 (New project)	Investigation of hydrodynamics of gas solid fluidized bed in terms of angle of fluidization and separation chamber aspect ratio (Module-I)	14-04-22	31-03-23	Abhishek Kumar	<p>Decision:</p> <p>Technical: The proposal for Module-I is accepted. The PL needs to do more literature search before commencing the project execution.</p> <p>Mandays: AK: 50 days</p> <p>Financial: Cont./Consum.: 0.15 L; TA/DA: 0.25 L</p>

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						Fab./Outsourcing: 2.60 L Approved
37.	OLP-0419 (New project)	Development of Fe-rich cost effective High-Entropy Alloys for high temperature applications (Module-I)	14-04-22	31-03-23	Vikas Shivam	Decision: Technical: The proposal for Module-I is accepted. Financial: Not Applicable Approved
38.	OLP-0420 (New project)	Microstructural evolution of Superalloy Inconel 740H during Thermomechanical Processing (Module-I)	14-04-22	31-03-23	PVS Chaitanya	Decision: Technical: The proposal for Module-I is accepted. Financial: Cont./Consum.: 0.30 L Approved
39.	OLP-0421 (New project)	Preparation of a geopolymer-type binder from briquette ashes of Ulaanbaatar, Mongolia	14-04-22	13-10-22	Zolzaya Tsoodol	Decision: Technical: The proposal is accepted. Financial: Not Applicable Approved
40.	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	Decision: Technical: The progress report has been submitted and found satisfactory. Financial: The approved fund (balance amount) shall be carried forward. On-going
41.	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 progress report has been submitted and found satisfactory. Financial: The approved fund (balance amount) shall be carried forward. On-going
42.	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 progress report has been submitted and found satisfactory. Financial: The approved fund (balance amount) shall be carried forward. On-going

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43.	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 progress report has been submitted and found satisfactory. Financial: The approved fund (balance amount) shall be carried forward. On-going
44.	OLP-0405 (New Project)	Evaluation of mechanical properties across fusion boundaries of dissimilar metal welds materials using ball indentation technique and co-relate with microstructural characteristic (Module-I)	01-11-21	30-09-22	Mousumi Das	Decision: Technical: The progress report has been submitted and found satisfactory. Financial: The approved fund (balance amount) shall be carried forward. On-going

[D] Infrastructrue Development 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
45.	OLP-0409 (New project)	Development of a MoU management System	01-12-21	31-05-22	Beena Kumari	Decision: Technical: The proposal is accepted. Mandays: BK: 30 days; SKP: 5 days Financial: Cont./Consum.: 0.50 L Approved
46.	OLP-0422 (New project)	Revamping in-house project management system (CSIR-NML-IPSG) Phase III	01-06-22	31-03-23	Beena Kumari	Decision: Technical: The proposal is accepted. Mandays: BK: 45 days; AKU: 20 days; VCS:10 days Financial: Cont./Consum.: 0.50 L Approved

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