

Sponsored projects undertaken as project leader :

Title of the Project	Sponsoring Organization	Project no	Amount	Role
Very high power MW Tubes: Design and Development Capabilities (MTDDC) April 2013-March 17	CSIR Network project Nodal Lab. CSIR-CEERI	: PSC 101	NML Share : 160	PL for the Module of CSIR-NML
Advanced ceramic materials and composites for energy and structural applications (CERMESA) April 2013-March 17	CSIR Network project: Nodal lab CGCRI	, ESC 104	NML Share: 38 L	Co-PL
Development of improved protective coating for solar thermal application on aluminum with higher reflectivity May 2014-April 2015	Aditya Birla group S &T	SSP 0909	11.36 L	PL
Wear and corrosion resistant nanocomposite coating better than CrN 1 st Dec 2013-30Nov 2015	Boeing USA	SSP 0878	38.00 L	PL
Study on the interface layer formation during hot dip galvanizing/ galvannealing of advanced high strength steel for automotive applications (GAP 0253) 16-12-2013 to 15-12-2016)	SDF and Tata Steel	1594 L		Member, Evaluation of microstructure, interface, mechanical behaviour of galvanized coating.
Environmental friendly aluminium coating to replace cadmium-phase III Nov 2012-Nov 2015	Boeing USA	SSP 0816	72.74 L	Co-PL
Development of compositionally modulated multilayered alloy of Zn-Mn Coatings by electroplating technique Dec 2013-Dec 2015	Boeing USA	SSP 0886	36.00L	Member evaluation of microstructure and interface, total review.
Studies on impact of air pollution on corrosion of metallic and non metallic materials, Jan 2011-March 2015	Central pollution board CPCB	SSP 0640	83.34 L	Member, Analysis of the data and review
Coated steel products performance evaluation, Jan 13 to Dec 16	Tata Blue scope	SSP 0823	33.8 L	Member, analysis of the data and review Member
Solar reflecting and protective coating on aluminium for solar	Aditya Birla group S &T	CLP 0096	11.36 L	PL

reflectors in power plant application. Phase I March 2012-Sept 2013				
Design of novel hard & tough amorphous metallic coatings. 1/10/12 to 30/09/13.	Inhouse NML	OLP180	10 L	Co-PL
ENVIRONMENTAL FRIENDLY ALUMINUM COATING TO REPLACE CADMIUM-Phase-II	Boeing USA 10-11-11 to 31-5-13	SSP-0763	33.008 L	Co-PL
ENVIRONMENTAL FRIENDLY ALUMINUM COATING TO REPLACE CADMIUM-Phase-I	Boeing USA 1-11-10 to 9-12-11	SSP-0656	13.245 L	Co-PL
Development of WC-Co coatings by plasma spray / HVOF technique on sink roll for applications in galvanizing bath	Tata-Steel 1-9-10 to 29-2-12	CLP-0069	10.313 L	Co-PL
Development of suitable Zn-Ni coatings by Plasma spray or HVOF technique for applications in fuel tank and anti bacterial components	Tata Steel	CLP-0070 Aug 2010-July 2011	9.88 L	Co-PL
Development of Zn-Ni-Cu coatings on CRM sheets for anti bacterial and fuel tank applications,	Tata-Steel	CLP-0091 Dec 2011-June 2012	9.927 L	Member,
Development of high temperature composite coatings for life extension refractory lining or new lining for LD converter: Phase I	Tata-Steel 1-12-2011 to 30-6-2012	CLP-0078	5.29 L	Co-PL
Nanostructured Advanced Materials	CSIR Network Project: Nodal LAB: CSIR-NML Apr 2009-March2012	NWP 0051	3800 L	PL for the Module on Coatings & PL for the Activity: Nanostructured Ceramics, Composites and Hard Coatings,
Development and forming of performance driven special steels	CSIR SUPRA INSTITUTIONAL PROJECT: 2007-2012	SIP 0025	1600 L	PL for the Module: Surface engineering of steel for higher performance-automobile and hydro-turbine:
Development of advanced light weight metallic materials for engineering	CSIR Network Project Nodal Lab: CSIR-	: NWP-0028	950 L	PL for the Activity: Fabrication of TiB ₂ electrode for Aluminum production

applications	AMPRI 2007-2012			
Technology for assessment and refurbishment of engineering materials and components T(AREMAC)	CSIR Network Project Nodal Lab: CSIR-NML 2007-2012	: NWP 0027	3000 L	PL for the Activity: Nano coatings of TBC for gas turbine blades and inner side pipe coatings by SHS processing
Development of Multilayer tough nano-composite coatings for smart applications.	In house prolect Sept 2012, Aug 2013	OLP 135	10 L	Co-PL
Custom tailored specialty material	CSIR Network project: Nodal Lab: CSIR-CGCRI (2003-2007)	: CMM002 2	70.00 L NML's Share	PL of the Activity "Development of CN film by PECVD" under Module: Development of super-hard materials and coating. Co-PL: Development of boride base nano-composite
Catering to Aerospace Materials	CSIR Network Project: Nodal Lab: CSIR-NAL (2003-2007)	CMM001	NML's Share 51.50 L	Co-PL of the Activity: Fabrication of oxidation and wear resistant coatings of TiB ₂ coatings by plasma spraying for aerospace application
Deposition of Si-C-N nano-composite thin film	DST (Nov.2004-Oct 2007)	, GAP 0123	37.095 L	PL
Development of toughened Zirconia ceramics for tribological applications"	DST,(July 2003-June 2006), Collaboration with IIT Kanpur	GAP 0108	17.208 L	PL from CSIR-NML
Densed ceramic composite by SHS process,	DST under ILTP, Indo-Russian- Nov.2005 - Nov.2008	GAP-0142	12.39 L	PL
Synthesis & sintering of ZrB ₂ - Al ₂ O ₃ composite	DST under ILTP Indo Russian. Apr. 2000-Mar 2004	- GAP 0057	16 L	PL
Development of piezo polymer composite of PMN system	Inhouse, CSIR NML (2005-2006)	- OLP	5L	PL
Hard coatings of Ti/Zr diborides and carbon nitride	CSIR, Young scientist award project (1-1- 2000-31-12-2004)	OLP - 21631	10.00 L	PL
SHS of ZrB ₂ -C and ZrB ₂ -TiC composite	Inhouse Sept 2002-Aug 2003	- OLP	-5L	PL
Synthesis of borides by SHS process	Inhouse (1-9-98-- 31-3-2000)	- OLP	-5	PL