GOVERNMENT OF INDIA
MINISTRY OF CULTURE

LOK SABHA

UNSTARRED QUESTION NO. 2393
TO BE ANSWERED ON 15.12.2025

Activities of National Research Laboratory

2393. Dr. Thirumaavalavan Tholkappiyan:

Will the Minister of CULTURE be pleased to state:

(a) the details of the activities of the National Research Laboratory for conservation of cultural property during the last five years;

(b) whether the Government has allocated any funds for its activities during the last five years; and

(c) if so, the details thereof?

ANSWER

MINISTER OF CULTURE & TOURISM
(SHRI GAJENDRA SINGH SHEKHAWAT)

(a): The details are attached as Annexure-I.

(b) & (c): Yes, sir. Details are as under:-

Financial Year	**Allocated Budget** (in Lakh)	**Expenditure** (in Lakh)
2021-22	919.22	842.22
2022-23	539.00	465.48
2023-24	454.07	412.78
2024-25	419.72	403.68
2025-26 (up to 30.11.2025)	488.00	293.53

ANNEXURE-'I'

ANNEXURE REFERRED TO IN REPLY TO PART (A) OF LOK SABHA UNSTARRED QUESTION NO. 2393 for 15.12.2025

The details of the activities of National Research Laboratory for Conservation of Cultural Property during the last five years

National Research Laboratory for Conservation of Cultural Property **(NRLC)**, Lucknow established in 1976 is a subordinate office of the Ministry of Culture. It is a premier research organization with the mandate to Dating, Environmental Archaeology, Technical study by physical and chemical means, Conservation methods, Reference documentation, Assistance to other laboratories, Assistance to museums- state departments of archaeology-ASI-universities-libraries having no laboratory, training in conservation and liaison with national and international bodies.

2. The details of the activities of National Research Laboratory for Conservation of Cultural Property (NRLC) during the last five years in various fields are as follows:-

RESEARCH

Ongoing Projects

1. Effect of Tin in Bronze Alloys on the Corrosion Protection Efficacy of Modified Paraloid B72 Coating, Principal Investigator: Dr. Preeti Verma, Funding Agency: DST–SHRI, Project Cost: 62 lakh (Approx.)
2. Evaluation of Silane Coatings for Enhancing Corrosion Resistance of Copper Cultural Artifacts, Principal Investigator: Dr. Preeti Verma
3. Effect of Cuprite and Malachite Layers on the Corrosion Protection Efficacy of Paraloid B72 and PMMA Coatings on Copper Substrates, Principal Investigator: Dr. Preeti Verma, Project Member: Mr. Shailesh B.
4. The effect of different additive proportions on the compressive strength of mortars prepared as per the ASTM Standard, Principal Investigator: Dr. K.S.S. Mounika, Co-PI: Dr. Preeti Verma (Project to be undertaken)
5. The impact of UV exposure, relative humidity, temperature and salt spray tests on the durability of these mortar samples, Dr. K.S.S. Mounika, Co-PI: Dr. Preeti Verma (Project to be undertaken)

Completed Projects

1. Corrosion Protection Performance of Paraloid B72 Coating Modified by Dispersion of Nano Aluminium Oxide Powder on Iron Using EIS, Principal Investigator: Dr. Preeti Verma, Sponsored by INSA
2. Influence of Polyvinyl Acetate Coating Concentration on Corrosion Behavior of Copper:

In Perspective of Cultural Artifacts, Principal Investigator: Dr. Preeti Verma

3. Electrochemical Impedance and Surface Characterization of Microcrystalline Wax Coating on Copper for Conservation Application, Principal Investigator: Dr. Preeti Verma
4. Structure- Property Correlation of the Copper Alloy Coins of different Periods and Regions such as Kaushambi, Sasanian, Mughal, British Coins, Principal Investigator: Dr. Preeti Verma

PUBLICATIONS

1) Tahseen Karche, M.R. Singh (2021), Biologically induced calcium oxalate mineralization on 15th century lime mortar, Murud Seafort, India, Journal of Archaeological Science : Reports, https://doi.org/10.1016/j.jasrep.2021.103178
2) Anjali Sharma, M.R. Singh (2021), A Review on Historical Earth Pigments Used in India's Wall Paintings, Heritage, https://doi.org/10.3390/heritage 4030112
3) M.R. Singh, K. Ganaraj, V.M. Sharma (2021), Microbial activity and studies on excavated megalithic micaceous potsherds from Peninsular India, Cermica, 67 (2021) 250-260, http://dx.doi.org/10.1590/0366-69132021673823026
4) Deepakshi Sharma, M.R. Singh, M. Velayudhan Nair (2021), Scientific analysis of indigenous materials in Indian palm-leaf manuscripts, ICOM-CC, 19th Triennial Conference, 2021 Beijing
5) B. Dighe, M.R. Singh, T. Karche (2021), Traditional use of organic additives (bamboo foliage, flax fibre and millet grains) in 16th century lime plaster of Solapur Fort, India, Indian Journal of Traditional Knowledge, Vol 20(1), January 2021, pp 106-116
6) Vandana Singh, M.R. Singh (2021), Microscopic Imaging of Entrapped Slag in Ancient Iron Artifact (300 BCE) from the Middle Ganga Plains of India, International Journal of History of Science, VOL 55.4, pp 1-9.
7) Anjali Sharma, M.R. Singh and Karambir Singh (2021), Transfer of Wall Paintings in India: A Review and Approach, Studies in Conservation DOI:10.1080/00393630. 2021.1890425
8) Siva Sankar Panda, Neena Singh and M.R. Singh (2021), Development, characterization of traditional inks for restoration of ancient manuscripts and application on various substrates to understand stability, https://doi.org/10.1016/ j.vibspec.2021.103232
9) Preeti Verma et. al., "Influence of Polyvinyl Acetate Coating Concentration on Corrosion Behaviour Of Copper: In Perspective of Cultural Artefacts", Canadian Metallurgical Quarterly (2025): 1-10.
10) Preeti Vermaet. al., Microstructural Characterization of EarlyTwentieth-Century British Period Indian Copper Coins, X-Ray Spectrometry, 50 (6) (2021): 482-490
11) Preeti Vermaet. al., Microscopic Examination of the 2,300 Year Old Excavated Steel Plowshare From Northern India, X-Ray Spectrometry 48 (6) 674-681
12) Preeti Vermaet. al., Metallurgical Investigations of Indo-Sasanian Copper-Silver Alloy Coins Of Gurjara-Pratiharas Dynasty, Metallurgical And Materials Engineering(2020) ISSN 2217-8961
13) Preeti Vermaet. al., "Microstructural Characterization of High Tin Bronze Mirror, Arnamula, Kerala", Research And Developments In Material Processing, Modelling and Characterization (RDMPMC 2020), Aug 24-26, 2020, NIT Jamshedpur.
14) Preeti Verma et. al., Microstructural Characterization Of Early Twentieth Century British Period Indian Copper Coins, Webinar For Young Researchers In Metallurgical & Materials Science, Aug 12-14, 2020, CSIR-NML.

15) Preeti Verma, et al. The Corrosion Behavior of The Paraloid B72 Protective Coating On Copper Using EIS, International Conference On Corrosion And Coating (i3c), December 07-08, 2022, CSIR, NML
16) Preeti Verma et. al., Effect of Concentration and Multilayered Paraloid B72 Coating On Corrosion Behaviour of Mild Steel, Eis, International Conference On Corrosion And Coating (i3C), February 07-08, 2022, CSIR, NML.
17) 01Book on the Conservation of Metallic Artifacts is also about to be finalised.
18) 05 Manuscripts are under review and about to be submitted.
19) Sanjay Prasad Gupta and Sachin Kumar Agnihotri (2025). Fungal Deterioration of Monument with Special Reference to Aspergillus: A Case Study. International Journal of Development Research. 15 (01): 67586-67588.
20) Sanjay Prasad Gupta (2025). Eco-Friendly Methods To Control Bio-Deterioration Of Cultural Property. Conservation of Cultural Property in India Vol.(43):190-193.
21) Sanjay Prasad Gupta and Sachin Kumar Agnihotri (2025). Fungal deterioration of monument with special reference to As per gillus: A case study. Conservation of Cultural Property in India Vol.(43):169-173.
22) Presentation on title "Preserving Cultural Heritage through natural insect repellent: Sustainable strategies for Scientific Conservation and Preservation of Cultural Property" in the 52th National conference of IASC on Conservation of Cultural Property held on 23rd-25th Sep 2025 at Assam State Museum, Guwahati.
23) Presentation on title "Bio-deterioration of Cultural Property and their Eco- friendly Conservation" in the National conference of ICBCP held on 25th-27th Feb 2025 at Manipur University, Imphal.
24) Sanjay Prasad Gupta and Sachin Kumar Agnihotri (2024). Fungal deterioration of monument with reference to Queen's Mosque and Tomb at Sarangpur, Ahmedabad, India. *International Journal of Biology Innovations,* 7(2): 149-152.
25) Sanjay Prasad Gupta and Sachin Kumar Agnihotri (2024). Bio-deterioration and scientific preservation of Queen's Mosque, J. Env. Sci. Pollut. Res. 10(3): 498–500.
26) Sanjay Prasad Gupta and Iliyas Ahmad. (2024). New Approach for Restoration of Ivory and Ivory Inlay object with reference to objects at Maharaja Laxmishwar Singh Museum, Darbhanga, India : A Case Study. Conservation of Cultural Property in India. Vol (42):142-146.
27) Presentation on title "Eco-Friendly Methods to Control Bio-Deterioration of Cultural Property" in the 51st National conference of IASC on Conservation, Technology and Scientific Study of Ancient and Historic Metals held on 14th-15th Sep 2024 at MMCF, Udaipur.
28) Presentation on title "Bio Deterioration of ancient monuments: Cause and Remidial Measures" in the Environment & Social Welfare Society, Khajuraho organized ESW XI annual National Research Conference held on 28th- 29thJan 2024 Khajuraho.
29) Sanjay Prasad Gupta and Iliyas Ahmed. Conservation of Wooden Monuments of Maldives: An Endeavour of Padmasri O.P. Agrawal Gains Reputation to the Nation. A chapter in a book of Biodeterioration of Cultural Property and Researches on Conservation of Heritage Buildings, Maya Publishing House, New Delhi, 259-280,2023.
30) Sanjay Prasad Gupta and Iliyas Ahmad. (2024). New Approach for Restoration of Ivory and Ivory Inlay object with reference to objects at Maharaja Laxmishwar Singh Museum, Darbhanga, India : A Case Study. Conservation of Cultural Property in India. Vol(42):142-146.

31) Sanjay Prasad Gupta and Sachin Kumar Agnihotri, Fungal deterioration of historical monument with reference to Jaleshwarnath temple of Shivpur, Chhattisgarh, India. International Journal of Biology Sciences , 5(2): 19-21, 2023.

32) Sanjay Prasad Gupta and Sachin Kumar Agnihotri. Fungal Involvement in Bio weathering of Historical Monument with reference to Bateshwar Hindu Temples, Morena Town of Madhya Pradesh, India, International Journal of Current Research Vol. 15, Issue, 08, pp.25631-25634 August, 2023.

33) Gupta, S.P. & Agnihotri S.K. Isolation and Identification of Fungal Species and Scientific Preservation of World Heritage: Case of Fatehpur Sikri, Uttar Pradesh, India.

34) The book titled "Modern Perspectives in the Field of Cultural Heritage Conservation" authored by Sanjay Prasad Guha and Atul Kumar Yadav, published in Hindi by Maya Publication, New Delhi. Sanjay Prasad Gupta. Fungal Involvement in Bio Weathering of Historical Monument with Reference to Gopinath Temple at Gopeshwar Town, Chamoli, Uttrakhand, India. International Journal of science and Research (IJSR).Vol-12 (1,) 356-358:2023.

35) Sanjay Prasad Gupta and Manoj Kumar Kurmi. Impact of Fungi on Historical Monument with reference to Mahadev temple Bastar of Chhattisgarh. International Journal of Life Science and Research Archive, 04(01,001-005:2023.

36) Sanjay Prasad Gupta and Rohit Mishra. Fungal Involvement in Bio Weathering of Historical Monument with Reference to Rumi Darwazaat Lucknow (Uttar Pradesh), India, International Journal of Science and Technology Research Archive,04(01), 222-225:2023 Sanjay Prasad Gupta and Nitin Kumar Maurya. Microbial Studies to Evaluate Bio- Deterioration of Oil Painting on Masonite board and its Conservation, International Journal of Science and Research (IJSR) 11:1,723-728:2022.

37) Sanjay Prasad Gupta and Iliyas Ahmed. Selection of Adhesives And Fillers In Conservation Of Wooden Monument Deteriorated By Termite With Reference To Dharumavantha Rasegafanu Mosque at male, Maldives, International Journal of Current Research, 14, (02), *20596-20600:*2022.

38) Sanjay Prasad Gupta et al. Sanitization-mediated Conservation Therapy of Cultural Property in COVID Situation: an Eco-Friendly Approach German Journal of Advanced Scientific Research (AJASR)*, Vol. 1, Issue. 1, pp. 1-4:2021.*

39) Sanjay Prasad Gupta et al. Efficacy of Natural Plant Product For Preventive Preservation Of Documentary Heritage Against *Aspergillus Flavus*: A Case Study. INT J CONSERV SCI 12, 2,: 443-450 444:2021.

CONSERVATION

S.No	Project Title	Nature of objects	No of objects conserved
	Year 2020-2021		
1.	Conservation Project at SMM Theatre crafts museum, New Delhi.	Collection mainly contains polychrome wooden masks, leather puppets, wooden artifacts, paper materials etc. related to Indian folklore arts.	101
2.	Conservation Projects of	Cloths, Water pots, stoves etc.	1358

	personal belongings of Baba Saheb Bhimrao Ambedkar at NIT, Nagpur		
3.	Conservation project at Shree Maruti Temple Project, KR Nagar, Karnataka-	The paintings were used for worship during the Ramanavami festival procession. They have great artistic and cultural significance in traditional Mysore painting.	02
	2021-2022		
4.	Conservation Project at Maharajadhiraj Laxmeshwar Singh Museum, Darbhanga, Bihar	Collection is made of ivory, silver, bone and wooden artifacts	176
5.	Conservation of different types of objects of Patna Museum, Patna	Manuscripts of Rahul Sankrityayan, silica paintings, glass paintings, cloths	500 folios of manuscripts, 12 silica paintings 6 glass paintings
	2022-2023 & 2023-2024		
6.	Conservation Project at Sultanpur Museum, Uttar Pradesh	Collection of sculptures from 12th to 17th Century and paintings of different styles, wooden sculptures of Ganesha.	76
7.	Conservation Project of Golden Chariot at Sri Chitra Enclave, Trivandrum, Zoo campus	18th century Golden Chariot of Travancore royal family used by Kings for Dushera festivals. It is huge chariot of 18x9x23 feet in dimension. beautifully decorated with gold foil and silver thread	**01**
	2023-24-25		
8.	Conservation Project at J.J college of arts, Mumbai	Paintings of contemporary artists of Maharashtra states	**100**
9.	Conservation Project at J.J college of arts, Mumbai	Books related to Fine arts	**100**
10.	Conservation Project at Sri Ambujavalli Temple, Mysore Karnataka- Sri Varahaswami and Ambujavalli temples, located within the Mysore Palace premises,	Feature exquisite mural paintings and architecture resembling the temples of Belur and Somnathpura. Inscriptions suggest construction between 1672–1704 AD. Historical records note that Sri Chikkadevaraja Wadiyar brought the Varahaswami deity from Srirangapatna in 1809 and commissioned this temple in Hoyasala style. The Ambujavalli temple was built during the reign of	350 Sq. foot

		Mummadi Krishnaraja Wadiyar, marking the peak of Mysore's traditional art. Temple construction dates are known but the painting dates remain unrecorded.	
	2024-2025		
11.	Conservation Project at Shree Maruti temple project, KR Nagar, Karnataka	According to the temple trust, the paintings are over ninety years old and they are used for worship during the Ramanavami festival procession. They have great artistic and cultural significance in traditional Mysore painting.	**02**
12.	Conservation Project of Oil paintings of Begam Samruat Rajbhawan Lucknow.	Oil paintings were made of Begam Samru, paintings were decorated with beautiful frames with original gold paint which was hidden under several layers of commercial gold paint. Joanna Nobilis Sombre (c. 1753 – 27 January 1836), popularly known Begum Samru, a convert Catholic Christian, started her career as dancing girl in 18th-century India, and eventually became the ruler of Sardhana a small principality near Meerut.	**02 (7x4 ft size)**

TRAINING IN CONSERVATION

Year	Name of the course/Practical training course/workshop	Number of participants
2020-21	Six months course in conservation of cultural property.	07
2021-22	Six months course in conservation of cultural property	05
	Two weeks practical training in conservation of art objects for the students M.A. Museology of department of museology, Banaras Hindu University, Varanasi	12
	Two weeks practical training course in conservation of museum objects for the students of Post Graduate Diploma in Museology and Archaeology of Sampurnanand University, Varanasi	22
	Two weeks practical training course in conservation of museum objects for the master students of Museology of Rabindra Bharti University, Kolkata	10

2022-23	Six months course in conservation of cultural property	09
	Practical training course in Conservation Oil Paintings	11
	Practical training course in Conservation Wall Paintings	07
	Two weeks practical training course in conservation of museum objects for the master students of Museology of Rabindra Bharti University, Kolkata	23
	Two weeks practical training course in conservation of museum objects for the students of Post Graduate Diploma in Museology and Archaeology of Sampurnanand University, Varanasi	26
	Two weeks practical training in conservation of art objects for the students M.A. Museology of department of museology, Banaras Hindu University, Varanasi	10
2023-24	Six months course in conservation of cultural property	11
	Two weeks practical training course in conservation of museum objects for the students of Post Graduate Diploma in Museology and Archaeology of Sampurnanand University, Varanasi	16
	Two weeks practical training in conservation of art objects for the students M.A. Museology of department of museology, Banaras Hindu University, Varanasi	08
	Two weeks practical training in conservation of paintings for the students M.A. Museology of department of M.A. Conservation of School of Heritage research &Management, New Delhi.	06
	Two weeks practical training in conservation of paintings for the students M.A. Museology of department of M.A. Museology of department of museology, Maharaja Saijirao Gaykwad University, Vadodara	06
	Two weeks practical training course in conservation of museum objects for the master students of Museology of Rabindra Bharti University, Kolkata	25
2024-25	Six months course in conservation of cultural property	29
	Two weeks practical training in conservation of Museum objects for the students M.A. Museology of department of M.A. Conservation of School of Heritage research & Management, New Delhi	15
	Two weeks practical training in conservation of art objects for the students M.A. Museology of department of museology, Banaras Hindu University, Varanasi	08
	Two weeks practical training course in conservation of museum objects for the students of Post Graduate Diploma in Museology and Archaeology of Sampurnanand University, Varanasi	26
	Two weeks practical training course in conservation of museum objects for the master students of Museology of Rabindra Bharti University, Kolkata	33

2025 -26	One week international workshop by NRLC on Conservation of Paintings practices in India at National Gallery of Fine Arts, Kula Lumpur, Malaysia	28
	Six months course in conservation of cultural property	24

NRLC- Library offered circulation services and reference Services to the patrons including staff, six months trainees, research scholars, etc. covering various parts of India.

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