

S. N. Sri Rama Desikan

25 - Burkit Road,

T. Nagar, Madras 17

RAJ BHAVAN, BOMBAY. 6,  
March 30th, 1957.

This is to certify that Pandit S.N. Sri Rama Desikan of "5. Neelakanta Mehta Street, T. Nagar, Madras. 17" was very well-known to me when I was Governor of Madras. I first met him at a friend's house and was much struck at the fluency with which he spoke Sanskrit and the knowledge he had of its literature. Thereafter he saw me at Raj Bhavan from time to time. It was always a pleasure to meet him and to realise how with a little effort, Sanskrit though regarded a very difficult language, can be mastered and used with comparative ease.

I had also the pleasure of introducing him to the President, Dr. Rajendraprasad and the Governor of Uttar Pradesh, Shri M.M. Munshi, who were both much pleased to meet him and to know of his attainments.

He is a youngman of talent and energy and deserves every encouragement at the hands of all those who are in a position to give it. He has my very best wishes for all health, happiness and success.

(Sd.) Sri Prakasa,  
GOVERNOR BOMBAY.

(True Copy)



MINISTER FOR NATURAL RESOURCES  
AND SCIENTIFIC RESEARCH  
NEW DELHI

Secret

June 10, 1951.

Dear Dr. Bhatnagar,

The Hon'ble Shri K. Santhanam spoke to me about his son Dr. K.S. Rajagopalan who is a Senior Technical Assistant in our National Physical Laboratory here. Mr. Santhanam told me that the youngman was very good in ~~xxx~~ Electro-Chemistry and he could be sent <sup>abroad</sup> for further studies in the subject, ~~which~~ <sup>if</sup> which would be helpful as, according to him, sufficient facilities were not available here.

I do not know the merits of the case at all but I should be glad if you would please look into the matter and see if we can help in any way. On hearing from you, I shall inform Mr. Santhanam accordingly.

With kind regards,

I am,  
Yours sincerely,

*Sri Prakasa*  
(Sri Prakasa).

*I had spoken to Mr. Krishnan also over the phone about this matter.*

*sb*

*Dr. Krishna may kindly see for necessary action.*  
Dr. S.S. Bhatnagar,  
Secretary,  
Ministry of N.R. & S.R.,  
New Delhi.

*Delhi 27/6*

*S, M.L.*

A. RESEARCH PUBLICATIONS

1. Electrical changes in layer-lattice silicates in relation to ionic exchange: R.P. Mitra and K.S. Rajagopalan, Indian Journal of Physics, 22, Pt.III (March 1948)
  2. Titration curves of hydrogen mica: R.P. Mitra and K.S. Rajagopalan, Nature, London, 162, (1948), 105
  3. On an apparently tribasic acid character of hydrogen mica: R.P. Mitra and K.S. Rajagopalan, Jour. Ind. Chem. Soc., 25, No.12 (1948), 591
  4. The electrochemical character of the clay mineral illite and its relation to that of muscovite: R.P. Mitra and K.S. Rajagopalan, Jour. Soil Sci., England, 3, No.1 (1952) 34
  6. Origin of the base exchange capacity of clays and the significance of its upper limiting value: R.P. Mitra and K.S. Rajagopalan, Soil Science, USA, 73, No.5 (1952) 349
  6. An improved water-drop method: K.S. Rajagopalan and V.P. Khanna, Jour. Sci. Ind. Res., 15B, (1956), 316
  7. Polarographic determination of dicyclohexyl ammonium nitrite: J.C. Chaudhry, T.J. Joseph and K.S. Rajagopalan, Jour. Sci. Ind. Res., 15B, (1956), 585
  8. Passivity to corrosion induced by chemical surface treatments: K.S. Rajagopalan and K.S.G. Doss, Naturwissenschaften, 44, Part 24 (1957), 631
  9. Vapour phase corrosion inhibitors. Part I: Different types and performance: K.S. Rajagopalan, Bull. India Section, The Electrochem. Soc., 7, No.1 (1958), 14-23
  10. Polarisation studies on chromate-treated zinc: K.S. Rajagopalan and K. Balakrishnan, Curr. Sci., 27, (October 1958), 387-388
  11. Metallic Corrosion: Cost and Prevention: K.S. Rajagopalan, Jour. Sci. Ind. Res., 17A, No.5 (1958), 191-193
  12. Atmospheric corrosion at Karaikal: K.S. Rajagopalan and G. Ramaseshan, Jour. Sci. Ind. Res., 17B, No.10 (1958), 438-439
  13. Fundamental studies on corrosion: K.S. Rajagopalan and K. Balakrishnan, Indian Construction News, 8, No.11 (1959), 17
  14. Relative corrodibility of zinc and steel in unpolluted atmospheres: K.S. Rajagopalan and G. Ramaseshan, Jour. Sci. Ind. Res., 18B, No.2 (1959), 87-89
  15. Corrosion in the tropics: K.S. Rajagopalan, Indian Construction News, 8, No.11 (1959), 30-33
  16. Corrosion Testing Farm at Mandepur Camp: K.S. Rajagopalan, and M. Sundaram, Indian Construction News, 8, No.11 (1959), 76-80
  17. Potential studies on passivity to corrosion induced by pretreatment processes for metals: I. Aluminium: K.S. Rajagopalan, Jour. Electrochem. Soc., USA, 106, No.2 (1959), 113-117
- mate treatment of zinc and other metals: Part I

Accelerated testing of chromate coatings: K.S. Rajagopalan and PL. Annamalai, Jour. Sci. Ind. Res., 18A, No.4 (1959), 171-175

19. Corrosion Testing Farm at Mandapam Camp: K.S. Rajagopalan M. Sunderam and PL. Annamalai, Chemical Age of India, 10, No.2, April/June 1959, 209-219
20. Action of Corrosion Inhibitors under Impressed Current Conditions: K.S. Rajagopalan and Y.V.P. Ramachandra Row, Naturwissenschaften, 46, Pt.9 (1959), 318-319
21. Potential studies on passivity to corrosion induced by pretreatment processes: II: Comparative study of chromate treatment and chromate inhibition: K.S. Rajagopalan and K. Balakrishnan, Jour. Electrochem. Soc., 106, No.7 (1959), 562-566
22. Tensometric studies on corrosion inhibitors: Part I Dicyclohexylammonium nitrate: K.S. Rajagopalan, V.K. Venkatesan and K. Balakrishnan, Proc. Indian Acad. Sci., Vol.1, No.4 (1959), 272
23. Pretreatment of zinc before painting: K.S. Rajagopalan and PL. Annamalai, Jour. Sci. Ind. Res., Vol. 18B, (1959), 497
24. Corrosion of metals at Mandapam Camp, India: K.S. Rajagopalan, M. Sunderam and PL. Annamalai approved for early publication in Corrosion, USA
25. Publication of researches conducted in Delhi University (to be published by Delhi University) Thesis on "Some Aspects of the Electrochemistry of the Micas and other Layer Lattice Silicates in relation to their Lattice Structures" by K.S. Rajagopalan. Details of post-graduate work and published papers.

## B. OTHER PUBLICATIONS

1. The clay minerals: K.S. Rajagopalan, JOSWA, Kanpur
2. Tropical Corrosion: K.S. Rajagopalan, Bull. India Section of the Electrochem. Soc., 6, No.2 (1957), 29
3. Polarographic determination of Gammaxane: K.S. Rajagopalan, Bull. India Section of the Electrochem. Soc., 6, No.3 (1957), 51
4. Vapour Phase Corrosion Inhibitors: Part II: Applications: K.S. Rajagopalan, Bull. India Section of the Electrochem. Soc., 7, No.2 (1958), 37-43
5. Prevention of corrosion of engineering stores during storage and transit: K.S. Rajagopalan, Engineering and Trade Annual, Indian Export Trade Journal (1958), 18-25
6. Refresher Course of Corrosion: K.S. Rajagopalan, Indian Construction News, 3, No.11 (1959), 81

C. PAPERS PRESENTED AT SCIENCE CONGRESSES AND SYMPOSIA

1. An electrochemical approach to crystal chemical studies: Part II: The ion-dipole interaction at the mica-water interface in relation to the principle of microscopic neutrality: R.P. Mitra and K.S. Rajagopalan, Proc. 35th Ind.Sci. Congress, Part III
2. An electrochemical approach to crystal chemical studies: Part III: The acid character of the micas: R.P. Mitra and K.S. Rajagopalan, Proc. 35th Ind. Sci. Congress, Part III.
3. An electrochemical approach to crystal chemical studies: Part IV: The acid character of the hydroxyl groups in neutral layer lattice silicates: R.P. Mitra and K.S. Rajagopalan, Proc. 35th Ind. Sci., Congress, Part III
4. An electrochemical method for the identification of illite in soils and other argillaceous sediments: R.P. Mitra and K.S. Rajagopalan, Proc. 36th Indian Sci. Congress, Part III
5. On the question of the existance of a definite base saturation limit of layer lattice silicates: R.P. Mitra and K.S. Rajagopalan, Proc. 36th Ind. Sci. Congress, Part III.
6. Some common electrochemical features of Kaolinite and asbestos: R.P. Mitra and K.S. Rajagopalan, Proc. 36th Ind. Sci. Congress, Part III
7. Potential studies on passivity to corrosion induced by pretreatment processes: Part I: Aluminium: K.S. Rajagopalan, Part III, Abstracts, Proc. 45th Ind. Sci. Congress
8. m-dinitrobenzene as a vapour phase inhibitor: K.S. Rajagopalan, Part III, Abstracts, Proc. 45th Ind. Sci. Congress
9. Corrosion in the tropics: K.S. Rajagopalan, Part IV, Discussion -do-
10. Conversion coatings: K.S. Rajagopalan, -do-
11. Corrosion inhibitors with special reference to oil soluble: K.S. Rajagopalan, Proc. 45th Ind. Sci. Congress, Part IV, Discussion
12. A new approach to passivity and corrosion inhibitors: K.S. Rajagopalan, and K. Balakrishnan, Proc. 46th Ind. Sci. Congress, Part III, Abstracts
13. Tensometric studies on corrosion inhibitors: K.S. Rajagopalan, V.K. Venkatesan and K. Balakrishnan, Proc. 46th Ind. Sci. Congress, Part III, Abstracts
14. Corrosion and Metal Finishing: Symposium on "Electrodeposition and Metal Finishing" organised by India Section of the Electrochemical Soc., at Karaikudi in December, 1957
15. Surface preparation of steel and other metals for painting: K.S. Rajagopalan, symposium on "Electrodeposition and Metal Finishing" organised by India Section of the Electrochemical Society at Karaikudi in Dec. 1957
- 16.

16. Chromate treatment of metals: K.S. Rajagopalan, symposium on "Electrodeposition and Metal Finishing" organised by the India Section of the Electrochemical Society at Karaikudi in December 1957
17. Fundamental studies on corrosion: K.S. Rajagopalan and V. Balakrishnan, symposium on "Corrosion and Its Prevention" organised by the Society for Corrosion and Coating Technology, at Calcutta in December 1958
18. Corrosion in the tropics: K.S. Rajagopalan and G. Ramaseshan: Symposium on Corrosion and Its Prevention organised by the Society for Corrosion and Coating Technology at Calcutta in December 1958
19. Corrosion Testing Farms: K.S. Rajagopalan and M. Sundaram: Symposium on "Corrosion and Its Prevention" organised by the Society for Corrosion and Coating Technology at Calcutta in December 1958
20. Refresher course on corrosion: K.S. Rajagopalan, symposium on "Corrosion and Its Prevention" organised by the Society for Corrosion and Coating Technology at Calcutta in December 1958
21. Annual loss due to corrosion in India: K.S. Rajagopalan symposium on "Scientific Conservation of Material Resources" by SWA, Kanpur in February 1959
22. Polarographic Studies on Corrosion: K.S. Rajagopalan V.K. Venkatesan and K. Balakrishnan, Golden Jubilee symposium on "Polarography" of the Indian Institute of Science (1959), Bangalore

**D. DETAILS OF CANDIDATE'S RESEARCH EXPERIENCE AND  
SPECIALISED TRAINING:**

**1. In the Chemical Factories of the Kesar Sugar Works  
Ltd., Gurgaon, B.B. & C.I., Riv., (May 1946- Aug 1946)**

The candidate obtained first hand experience of unit operations in chemical industry particularly regarding production of inorganic photographic chemicals e.g., sodium thiosulphate, sodium bisulphite, while working in the factories as an apprentice chemist.

**2. In the University of Delhi (August 1946 to 1949):**

The candidate carried out research work in the field of physical chemistry under the guidance of Prof. R.P. Mitra Professor of Physical Chemistry in the University.

The candidate's researches concerned the acid-character and ion exchange properties of micas and other layer-lattice silicates. The experimental approach to the problem consisted in making a detailed study of the titration curves of the "hydrogen" forms of the minerals under study with bases and in estimating their "free" and "total" acids under different conditions. The inflexion points in the titration curves, their locations in the pH scale, the base exchange capacities of the minerals were the aspects which received particular attention. The candidate has been able to interpret the electrochemical features observed by him from the standpoint of the crystal chemistry of the minerals and throw new light on the limiting base exchange capacities of clay minerals present in soils.

His work under Dr. R.P. Mitra called for specialised knowledge of (1) colloid chemistry (2) electrochemistry and (3) crystal chemistry and ability to build up a physico-chemical laboratory suited to carry out the above-mentioned investigation.

The candidate is the first student to obtain doctorate degree in physical chemistry from the University of Delhi and was given a special prize in the Science Exhibition of the Faculty of Science for the year 1948-49.

The candidate's thesis on "Some Aspects of the Electrochemistry of the Layer-Lattice Silicates in Relation to their Lattice Structures" was examined by

(1) Professor Linus Pauling, N.J.,  
Director,  
California Institute of Technology, USA

(2) Professor G.B. Marshall,  
Professor of Chemistry,  
University of Minnesota, USA

(3) Dr. J.C. Ghosh,  
Member, Planning Commission,  
India

The report of the examiners spoke "in very high terms" of the thesis to quote Sir Maurice Geyer, the Vice-Chancellor of Delhi University.

**3. In the National Physical Laboratory, Hillside Road,  
New Delhi (June 1949 to November 1951):**

Under the guidance of Dr. K.S. Krishnan, F.R.S., Director of the Laboratory, the candidate studied photo-dissociation in single crystals and acquainted himself with techniques used in photochemistry and methods of preparation of single crystals. He also gave advice on practical problems referred to the Analytical Chemistry Divn. of the Laboratory.

4. In Technical Development Establishment Laboratories (Ministry of Defence), Kanpur (March 1952 to September, 1956)

I. The candidate organised a section for the laboratory for the investigation of practical problems of corrosion and corrosion prevention faced by the Defence Services during this period and has been instrumental in the solution of a number of applied problems referred to him. The two big projects investigated by him are given below:

- (1) Corrosion inside gun recoil systems of artillery equipment - cause and methods of prevention of
- (2) Development of new vapour phase corrosion inhibitors which can be produced indigenously.

Ad hoc problems investigated by him are:

- (1) Corrosion of aircraft engine sleeves
- (2) Corrosion of vehicle bodies
- (3) Development of indigenous substitutes for foreign corrosion preventives
- (4) Passivation treatment for metallic stores
- (5) Corrosion in fuel tanks and containers
- (6) Prevention of deterioration of galvanised ironware during storage
- (7) Derusting and preservation of (i) wire gauze (ii) fuse wire (iii) silver steel (iv) concertina wire (v) tail lamp (vi) bomb and train units etc.
- (8) Blue print for plant for large scale derusting of 5 gallon and 45 gallon drums
- (9) Efficiency of alkaline cleaning solutions and their action on different metals
- (10) Derusting and preservation of steel during ribbon on a large scale
- (11) Comparative resistance of aluminium and stainless steel for the manufacture of mugs and plates
- (12) Corrosion by desiccant carbon
- (13) Period of effectiveness of mineral jelly/beeswax
- (14) Preservation of fire extinguishers
- (15) Derusting and preservation of filler neck assemblies
- (16) Care and preservation of slip gauges
- (17) Method of derusting shells
- (18) Container for oleic acid
- (19) Plant for large scale derusting of jerri cans
- (20) Container for titanium tetrachloride
- (21) Prevention of rusting in fuel tanks
- (22) Preservation of ball bearings
- (23) Scale removal from aluminium kettles

The first two under I were long-term projects and were investigated successfully over a period of nearly 3 years. The remaining 10 were short-range problems. Patenting of a vapour phase inhibitor developed by the undersigned is in progress in the Ministry of Defence. The laboratory solution offered by the undersigned for the prevention of corrosion in gun recoil systems was accepted by the Ministry of Defence and the undersigned was asked to carry out a practical trial with 12 x 5.5" equipments lasting over a period of nearly 18 months. The trial confirmed the laboratory data in important respects.

Besides the above, the undersigned has answered a large number of queries on various corrosion problems by reference to literature.

II. The candidate also carried out research work on analytical problems requiring the application of physico-chemical

techniques during his tenure of office in the Technical Development Establishment Laboratories, Kanpur. He was specially investigating the application of polarography to the differentiation of closely related organic compounds, which he had taken as a project and gave a testing procedure for the estimation of gammexane.

III. Much of the work done by the candidate in Technical Development Establishment Laboratories went unpublished and were submitted only as government reports and answers to letters from the Headquarters. Two papers published by him are given below:

- (1) An improved water drop corrosion test
- (2) Polarographic determination of dicyclohexyl ammonium nitrite

(Three papers and one patent on his work on vapour phase inhibitors have been sent for filing and publication to the Ministry of Defence.)

5. In the Central Electrochemical Research Institute, Karaikudi:

(a) From November 1951 to March, 1952:

The candidate was in charge of selection of books and equipment for the Institute which was under construction at that time. During this period of service orders for a large number of books and equipment were placed.

(b) From September, 1956:

Systematic examination of the corrosion of mild steel, zinc, aluminium and copper has been carried out in a typically rural atmosphere (Karaikudi) and work has been started on exposure of both bare metal specimens and painted metal in a purely marine atmosphere (Mandapam Camp) and in an industrial-cum-marine atmosphere (Madras Port). A Corrosion Research Station has also been established at Mandapam Camp on the South East Coast of India in the campus of Central Marine Fisheries Research Station. This test station constitutes one of the most corrosive marine locations in the world. Data of considerable practical importance have been obtained at this site by a study of the seasonal variations of ferrous corrosion.

Investigation is in progress on the development of cheap vapour phase inhibitors and a patent has been applied for, to cover the discovery of two such inhibitors which are much cheaper than the commercially established products.

Fundamental researches have been undertaken on the mechanism of chromate passivation and a new interpretation of the changes in potential of chromate-treated zinc has been propounded, applying the theory of absolute reaction rates. This has brought out the important part played by the anodic and cathodic area ratios on the corrosion potential of a metal.

The inhibitive action of a number of organic compounds are being studied for the first time by a new technique known as tensametry.

The performance of inhibitors when in combination with cathodic protection has been taken up for finding out the minimum currents required for protection in the presence of various inhibitors. A novel feature of this investigation is the use of the Hull Cell for quickly determining the protective current density required and interesting results have been obtained, which show that the potential required for protection of steel plates in sulphuric acid solution containing inhibitor can be

different from that required in the absence of inhibitors.

Numerous problems of corrosion referred to by industries have been taken up. A few of these problems are summarised below:

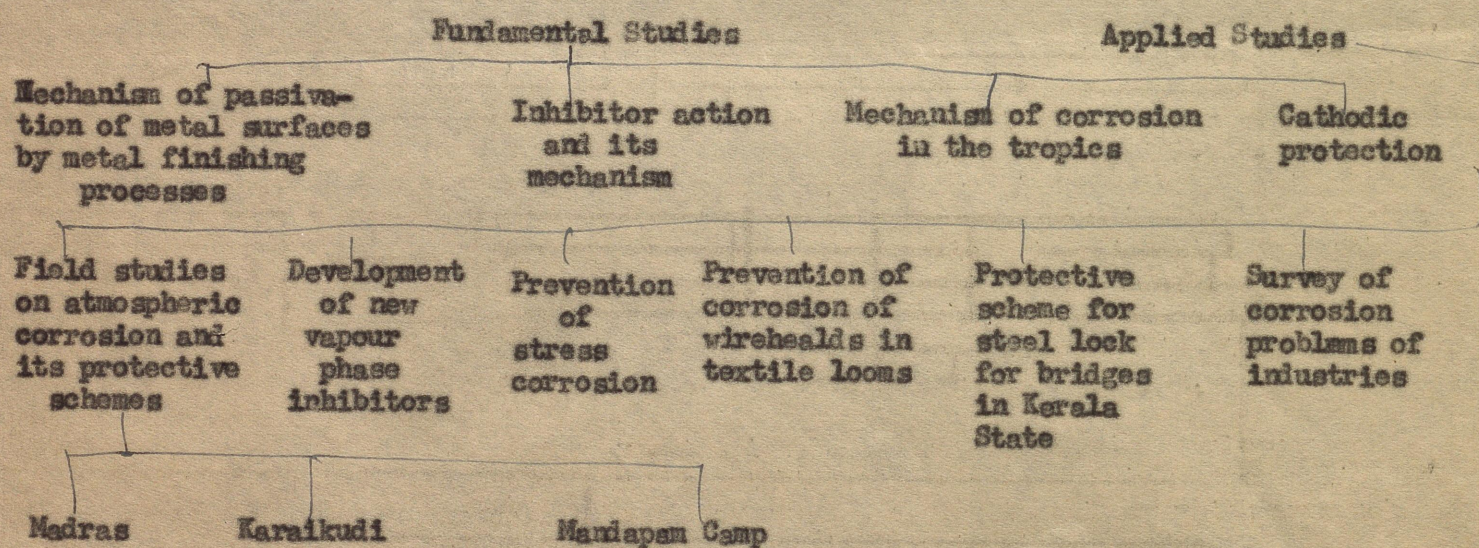
(1) The corrosion of steel gates of the spillway at Thottapalli, Kerala, are found to get corroded inspite of painting twice a year. The best method of giving the plates longer life is under study.

(2) Tin-coated wire healds used in textile looms are replaced every year at the cost of 40 lakhs and the methods of increasing the life of these materials are under study.

(3) The failure of stainless steel parts in the evaporators of the Sindhri Fertilizers Limited has been traced to the phenomenon known as "Stress Corrosion Cracking". The cracking has been reproduced in the laboratory under conditions similar to that of the factory and it has further been established that by suitable cathodic protection, the cracking of the stressed specimens can be avoided almost indefinitely. Incidentally, the mechanism of stress corrosion cracking is proposed to be studied to gain a more fundamental insight into the phenomenon.

Subjects on which work has been done in the Central Electrochemical Research Institute can be schematically shown as follows:

#### CORROSION RESEARCH



A refresher course on corrosion and its prevention was conducted lasting for five weeks in November, December, 1959 and was attended by 10 representatives from industries and government departments in the country. During this intensive course, instructions were given on the theory and practice of corrosion and its prevention, incorporating the latest developments in the ideas and methods of testing and research in the field of corrosion. The trainees came from the following industries:

- (1) The Hindustan Aircraft Ltd., Bangalore
- (2) Mysore Iron & Steel Works, Bhadravati
- (3) Indian Telephone Industries, Bangalore
- (4) The Indian Aluminium Co., Calcutta
- (5) The Hindustan Insecticides, Delhi
- (6) Mettur Chemical & Industrial Corpn., Ltd., Mettur Dam
- (7) Central Building Research Institute, Roorkee
- (8) Chaturvedi & Sons, Agra
- (9) Didwania Brothers, Delhi
- (10) Palghat Metal Industries, Palghat.

The cost of corrosion control in India has been worked out and it has been shown that this country will be spending annually Rs.150 crores on prevention of corrosion by the use of paints, metallic coatings and use of corrosion resistant alloys for 1960-61.

A large number of queries from various organisations have also been answered.

E. REFERENCE TO CORROSION RESEARCH IN THE CENTRAL ELECTRO-CHEMICAL RESEARCH INSTITUTE IN THE PRESS:

1. Extract from Press Information Bureau, Government of India, Feature "India's National Laboratories-9":

"ELECTROCHEMICAL RESEARCH IN INDIA: KARAIKUDI INSTITUTE'S OUTSTANDING WORK:

On the wind-swept, weather-beaten south-eastern coast of India at a place called Mandapam Camp near Dhanushkodi Pier, a group of scientists are engaged in studying one of industry's most dreaded phenomena, namely corrosion. It is corrosion that bites into the hardest of steels and cuts down the life of any metal-made thing - from a mighty ship to a tiny pin.

The scientists belong to India's Central Electrochemical Research Institute, and the Camp has been set for conducting field trials of methods of corrosion prevention developed at the Institute.

The Research Institute, established at Karaikudi (Madras State) in January, 1953, is among the youngest of the National Laboratories set up by the Council of Scientific and Industrial Research. The Council had for long been seized of the need of a separate institute for electrochemical research, in view of the rapid developments taking place in the generation of hydro-electric power in the country. The very first task taken up by the Institute was that of corrosion control, which had been presenting a serious threat to the growth of ferrous industry.

NEEDS OF FERROUS INDUSTRY

A beginning was made by examining, at first, problems of machine tools, electrical goods, cycle, automobile, coach and shipbuilding, and sheet metal industries which produce every year material and goods worth Rs.335 crores. During the Second Plan period, these industries are expected to expand to six times.

at  
Preliminary investigations carried out/the Karaikudi Institute on the development of various corrosion preventing devices have shown that numerous organic chemical compositions suitable for this purpose can be produced in the country. The trials being carried out at the Mandapam Camp are likely to yield useful information regarding the serviceability of these chemicals under all conditions.

Corrosion control, however, is not the only problem being tackled by the Institute....."

2. Extract from "The Hindustan Times" dated New Delhi  
18th August, 1957:

"Madras Newsletter      RESEARCH ON METAL CORROSION

Corrosion of metals is a serious problem in all parts of the world and in the USA alone it is estimated to cost that country as much as \$ 6 billion. Conditions in tropical countries such as India, are said to be more favourable for corrosion to take place and there is yet no estimate of the extent to which it is the cause of loss to our country. This is one of the many items of active research work at the National Electrochemical Research Laboratories - one of the 14 National Laboratories of the Government of India - at Karaikudi in Madras State. Dr. Rajagopalan, a Senior Scientific Officer of the Institution who is working on this problem has just completed a four-week study tour of some of the centres in the country where he thinks that loss on account of corrosion is likely to be considerable."

3. Extract from "The Statesman" dated December 15, 1959

"METHODS OF CONTROL OF CORROSION  
Need to Pay Attention to Problem Stressed

.....

Papers prepared for the symposium were on "Fundamental studies on corrosion", "Corrosion problems in Railways" and "Corrosion testing farm" among other subjects. In his paper Dr. K. S. Rajagopalan of the Central Electrochemical Research Institute stated that it was proposed to start a refresher course on corrosion, its cause and its cure in the Institute from this year".

4. Extract from "The Statesman" dated April 17, 1959:

" HIGH CALIBRE RECOGNISED  
Research Workers Praised by NEHRU

Karaikudi, April 15: ..... Earlier, he was taken round the Institute by Mr. K. S. G. Doss, Director of the Institute, who explained the research work being done at the Centre. He showed particular interest in an experiment to fight corrosion of metal."

5. Extract from "The Hindu" dated December 21, 1959:

"THEORETICAL PHYSICS  
School to be started

"Establishment of a regional laboratory for research in oil, gas, coal and forest products in Jorhat in Assam, reconstitution of the National Research Development Corporation and publication of books on science, including textbooks, are among the schemes which are being undertaken by the Union Ministry of Scientific Research and Cultural Affairs.

These schemes were disclosed here today by Prof. Humayan Kabir, Union Ministry for Scientific Research and Cultural Affairs at a Press Conference.

Prof. Kabir also announced that his Ministry was working on a scheme under the Third Five Year Plan to start a school of theoretical physics at a cost of Rs. 10 lakhs.

The Central Electrochemical Research Institute had initiated field investigations to collect data on corrosion of metals and metallic couples in tropical rural, tropical marine and industrial marine atmosphere."