

ALLOCATION OF CENTRAL FUNDS IN THE DRAFT 5 YEAR PLAN.

	non- Recurring	Recurring	Loans
Khargpur	314-76	150	X
Institute of Science	61- 28	23.38	4
	<u>375</u>	<u>175</u>	<u>4</u>
<u>A.I.C.T.E</u>			
Scheme of strengthening existing Institutions ..	96	46	13.4
Practical Training		46	
Res. Training scheme		45	
Development of Science and Technical Education	223	39	20
	<u>319</u>		

	<u>Buildings</u>	<u>Equipment</u>	<u>Loan</u>
Jadavpur	4	21	16
V.J.T.	7	10	2
Benares Engineering	2.1/2	17	2
Benares Mining ..	3	7	3
Calcutta University:			
Physics ..	2	3	
Radio ..	3	2	2.1/2
Applied Chemistry	5	3	
Nagpur ..	5	3.1/2	2
Dayalbagh, Agra ..	3	7	2
Aligarh ..	5	11	-
Benares Tech.			
a) Chemical Engineering	1	3	
b) Pharmaceuticals ..	1/2	2	2
Bombay ..	4	5.1/2	2
	<u>45</u>	<u>95</u>	<u>33</u>
A.C. College	3	1	..
Andhra Scientific & Tech.	4	4	..
Annamalainagar	3	7	3
	<u>10</u>	<u>12</u>	<u>5</u>

RK/

Name	Age	Qualification	Subject	PRESENT PAY				SUGGESTED PAY				CHILDREN	
				Basic pay	personal pay	Overseas pay	TOTAL	Basic pay	Personal pay	Overseas pay	Total	School going	not going
Dr. Repenthin	53	Dr. Ing.	Aero	850	200	200	1,250	850	400	250	1500	2	1
Dr. Wallauschek	40	Dr. Ing.	Instrument Technology	850	100	200	1,150	850	400	250	1500	3	-
Mr. Filipowsky	37	Dipl. Ing.	Electronics	900	-	200	1,100	900	250	250	1400	2	1
=====													
Dr. Sponder	42	Dr. Ing.	Aero	600	100	200	900	600	200	250	1050	-	-
=====													
Mr. Scholzze	39	Dipl. Ing.	I.T.	450	-	200	650	500	200	250	950	1	-
Mr. Suszkin	41		I.T.	350	-	200	550	400	50	250	700	-	-
Mr. Fiala Walter	31	Dipl. Ing.	Electronics	450	-	200	650	500	1500	250	900	-	-

NOTE: The Basic pay drawn by the Professors and lecturers is on the sanctioned scale, viz., Rs. 750-50-1000 for Professors, Rs. 500-25-750 for Asst. Professors, and Rs. 250-25-500 for lecturers. It is suggested that the Basic pay need not be raised and the sanctioned scale may be allowed to stand.

The Overseas pay given to one and all of them is Rs. 200 p.m. It is suggested that this may be raised to Rs. 250/- p.m. as it is observed that Dr. Tietjens and Dr. Havemann of the Institute of Science, Bangalore, are given Overseas pay of Rs. 250/- p.m.

To meet the wishes of the foreign recruits extra salary may be given as personal pay taking into consideration their age, qualification,

experience, No. of children to be educated etc. Taking these into account, personal pay is suggested against their names.

Even this revision in their pay will involve an additional expenditure of Rs. per annum under recurring expenditure. The remarks and suggestions of Dr. Bhatnagar and Dr. Krishnan are solicited by the Council of Management, M.I.T., so that the suggestion may be discussed in the council & early orders passed. The recommendations of Dr. Bhatnagar and Dr. Krishnan will be very helpful in settling the matter.

Till the arrival of Mr. Fiala Walter on the scene, i.e., in July, 1952, other recruits never expressed any discontentment about their salary and this is only after July, 52 that they have been sending joint representations pressing for revision of their pay.

Name	Age	Qualifica- tion	Subject	PRESENT PAY				SUGGESTED PAY				Children	
				Basic pay	personal pay	Overseas pay	TOTAL	Basic pay	Personal pay	Overseas pay.	TOTAL	School going	not going
Dr. Repentnin	53	Dr. Ing.	Aero	850	200	200	1,250	850	300	250	1,400	2	1
Dr. Wallauschek	40	Dr. Ing.	Instrument Technology	850	100	200	1,150	850	350	250	1,450	3	-
Mr. Filipowsky	37	Dipl. Ing.	Electronics	900	--	200	1,100	900	250	250	1,400	2	1
=====													
Dr. Sponder	42	Dr. Ing.	Aero	600	100	200	900	600	250	250	1,100	-	-
=====													
Mr. Scholzze	39	Dipl. Ing.	I.T.	450	--	200	650	450	275	250	975	1	-
Mr. Suszkin	41		I.T.	350	--	200	550	350	250	275 ²⁵⁰	875 ⁸⁵⁰		
Mr. Fiala Walter	31	Dipl. Ing.	Electronics	450	--	200	650	450	250	250	950	-	-

NOTE: The Basic pay drawn by the Professors and lecturers is on the sanctioned scale, viz., Rs. 750-50-1000 for Professors, Rs. 500-25-750 for Asst. Professors, and Rs. 250-25-500 for lecturers. It is suggested the Basic pay need not be revised and the sanctioned scale may be allowed to stand.

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Ing.
DR. RIPENTHEIN - AGE 53 - Joined Duty on 4--9-1951.

Aeronautical Professor. (750-50-1000).

Qualification.	How came to be appointed.	Remarks.
Diploma Engineer, Technical University, Berlin.	Aeronautical Professor:	
1918 - Radio observation Officer for Air Exploration.	Application dated 12-3-1951 on seeing advertisement in Technical Journals in Europe.	
1920 to 1925 - In the Civilian Aircraft force at Berlin - Engaged in the construction of gliders.	<u>Salary paid:</u> Rs.800 plus 100 ^{200 (P.P.)} plus Rs.200. (O.P.)	
1926-27 - Engineer in Yugoslavia and Test Engineer.	Loan of Rs.5,000 to be worked out in five years of service.	
1927- 32 - In Dornier Airplants, Chief of construction and calculation department - Leader for Propeller construction - Testing Airplane parts and motors manufactured in Germany, U.K.	Legation at Bonn, Germany - Interviewed him on 26-6-1951.	
1932--44 - Reporting Engineer for Electrical and Aircraft instruments in German Ministry for Air Force.	850 + 200 + 200 (at present) <i>Basic P.P. O.P.</i>	
1944--45 - Engaged in Engine construction in Southern Germany.		
1947-49 - Chief of Laboratory for Aero-Dynamic power plants and other control equipments for industrial purposes in Munich. Lecturer in Munich Scientific Publications. Was Watch & Ward in repair divisions.		

Dipl. Ing.

PROFESSOR RICHARD FILLIPOWSKY / PROFESSOR OF ELECTRONICS.

(750-50-1000)

Age: 37 - Joined duty in July 1950.

Qualification	How came to be appointed.	Remarks.
1933--39 - 6 years study in the Technical University, Vienna. <i>Dipl. Ing.</i> - 1939--45 - Research Engineer with Telefunken - Television Department. 1946--48 - Director of Electronics Institute - Consultant for Geo-Electric Research. 1948 - Chief Engineer of Marconi Laboratory Lisbon. Speaks and writes English fairly well. Knows German, Spanish, French and also Italian Languages. Publications in periodicals, one patent.	Letter dated 16-1-1950 to Mr. L. Venkatakrishna Iyer asking for scope for employment in commercial concerns - Applied to M.I.T. on 25-3-1950 - Contract for 5 years. Present Salary: Rs. 900 plus 200 - Loan Rs. 5000 to be written off on five years' service. Examiner for Electronics in the University of Madras and gives special extension lectures under Madras University auspices. <i>900 + 200. Basic O.P.</i>	

Ing.
DR RICHARD WALLAUSCHEK - PROFESSOR INSTRUMENT TECHNOLOGY.

(750-50-1000)

Age - 40 Years: Joined duty: March 1951.

Qualification.	How came to be appointed.	Remarks.
1931 Bachelor's Degree in Czecho-slavakia.	Professor Phillipowsky suggested his name and on his invitation he applied for the post on 13-11-1950. Terms of Appointment: Salary Rs.800 on scale Rs.750--50--1000 plus Rs.200 Non-Asiatic Allowance plus Rs.100/- Personal pay on basis of special "Habill" qualification - Gets now Rs.1,150.	<i>Contract for five years</i>
1935 - Professor's Degree from First Grade School in Mathematics and Physics at Prague.		
1936 - Doctor's Degree in Physics and GeoPhysics. Assistant in Prague Institute.		
1936-39 - Professor at the non-classical School.		
1939-43 - Engineer at Hyper frequency Laboratory at Berlin.		
1943-45 - Chief Scientist of Acoustical Laboratory of German Ministry of Armament.	$850 + 100 + 200.$ <i>Basic P.P. SP.</i>	
Since 1946 Engineer in Paris Centre - National J' Etudes - Tel&communications		
Can speak English fairly intelligibly.		

Dr. Ing

MR. SPONDER - Joined service on 20-2-1952
Assistant Professor (Aeronautics)
Age 42 years. ----

Qualification.	How came to be appointed.	Remarks
Technical High School at Graz. Free state of Dantzig Ship- building - Father Professor at Graz. Aeronautics - Under Professor Wanger. Scientific Publications. 1936 - Assistant to Aeronautical Professor at Technical High School Dantzig. 1937 - Teacher in Aeronautics and Applied Mathematics at Eng. School in Weimer. 1938--39 Engineer, Brown Boveri & Co., Germany. 1940--45 - Research Engineer in Ain- ring/Obli. 1946 - Asst. to Fluid Motor at Technical High School, Graz. Reference to six Professors.	Application forwarded by Director General of Civil Aviation. <i>Dr. Ing</i> <u>Terms Offered:</u> Basic pay Rs.600 plus 100 spe- cial pay for his Degree - Total Rs.700 plus Rs.200 Non-Asiatic Allowance - In all Rs.900. Rs.3,000 loan given for passage money to be worked out during service period. (<i>Contract for 5 yrs</i>). Dr. Sanger also recommended him. 17-11-1951 - Legation - Given satisfactory report - said he was a Professor in Austria - found thoroughly satisfactory in working and has theoretical knowledge of his subject. In the application, Sp Mr. Sponder referred to his desire to work in a peaceful country like India and participating in rapid progress in his special subjects. <i>600 + 100 + 200.</i> <i>Basic P.P. SP.</i>	

DIP. ING. OSCAR SCHOLZE - 39 years (Married - 1 child)

Joined in April 1952.

Qualification.	How came to be appointed.	Remarks.
Was Engineer in the Pechelbrom Refinery (Petrol) in France at the time of negotiation.	Suggested from personal knowledge by Dr. Wallauschek, M.I.T. Professor of Instrument Technology for Lecturership or Asst. Professor as useful.	
1939 - Diploma Ingr. of Prague Technical University.		
1939--41 - Technical Assistant in Thermodynamics in Prague Technical University.	Terms of salary - Rs.450 as Lecturer plus Rs.200 - Total Rs.650 - Loan of Rs.4,000 for passage etc. to be worked out in five years service.	
1942--45 - Research Engineer in the Rocket Research Institute at Peenemuende, Germany - designing test equipment manufacture and application of V2 Rocket research; Engineer in French Ministry of armament - Projecting Engineer in Pechel broun Saern Paris in designing industrial instrumentation for petrol refinery plants - Specialised in Thermodynamics, Thermodynamic instruments, refrigeration, combustion engines - Though not fully conversant with English, has enough language to convey technical subject information to students.	$450 + 200$ Basic sp.	

A. SUSZKIN - Age 41 - Joined Duty : 25-12-1951

Qualifications.	How he came to be employed.	Remarks.
In Russia - In Physics Department Electro Technical Institute, Moscow.	Dr. R. Wallauschek, Professor of Instrument Technology suggested for Suszkin as his Assistant and wrote to Suszkin on 2--6-1951 suggesting his accepting appointment on a salary scale of Rs.250--500 - starting Rs.250 plus 200 allowance -	20-8-1951 - Suszkin writes accepting Rs.350 plus 200 - asks for Rs.50 increment in second year as he could begin lecturing in English.
In 1943 War Prisoner in Germany.	First year (for want of English knowledge) to train students in Lab and Workshop - asked him to pick up working knowledge of English in one year and if he could lecture in second year Rs.50 instead of Rs.25 per annum. Wallauschek informs (a) Mr. Suszkin that above salary is adequate for a fair standard of life (b) M.I.T. will procure residence at cheap rent (c) Life enjoyable other Germans here satisfied (d) Institute to be built up - not an established one (e) No contract period because has to pick up English and prove capacity for practical work training.	He has completed one year service, but has not picked up sufficient English.
1944-45 in A.E.C. Factory, Berlin engaged in development of material testing apparatus.		He refused to exhibit the Instrument (Meson Counter) which he built up partly with materials brought from Germany and partly with M.I.T. materials when Pandit Jawaharlal Nehru came to the M.I.T. on 9th October 1952 -
1945-47 - Engaged in construction of Wilson Chamber.		Not subject to any kind of discipline
1949 - Hamburg University - Construction of Ray Counter. under Professor Hagon of Hamburg University and Professor Dr. E. Bagge working on thesis of Flying time of Mesotrans with a Geger Counter.		Prevents other staff working fully
Specially interested in High Vacuum Technics, High Vacuum instruments.	20-7-51 - Suszkin writes to M.I.T. asks for revision of salary after one year when he could train himself to lecture in English.	Refuses to say what work he can do in the second year.
	10-8-1951 - Wallauschek suggests accepting Rs.350 plus 200 and when he trains himself to lecture in English Rs.400 plus 200 - if he shows exceptional qualification, may press for Rs.500 plus 200.	After six months' service Principal allotted one hour lecture per week to pick up talking in English - He was not willing to take lectures though Principal and Professor persuaded him to lecture for his getting increment of Rs.50 - very irregular in attendance.

Increment due { 350 + 200 }
+ ?

WALTER FIALA - Age 31 - Joined M.I.T. February 1952.

Qualification.	How came to be appointed.	Remarks.
Diploma 1944 - Main Examination Degree of Academic Diploma Ingenieur.	Voluntary Application dated 25-8-1951	Application dated 25-8-1951 offering services.
1945 in service of Microphone and Loud Speaker Electro - Acoustical devices manufacturing firm. Patent for Loud Speaker	Professor Phillipowsky recommended. M.I.T. offered starting salary Rs.450 plus allowance Rs.200 Total Rs.650. Five years contract. Mr. K.V. Ramaswami Legation Vienna - Interviewed in Vienna and sent favourable report and gave Mr. Fiala a description of Madras conditions.	
25-9-1948 - Dynamic pressure microphone.	Professor Phillipowsky wrote him fully about conditions here. Soon after arrival wanted a revision of terms of salary in a letter of imperative and unsavoury language saying that there could be no efficient cooperation unless new contract with higher salary offered - was instrumental in making all other foreign professors indulge in trade unions, methods, irregular in attendance - refusing cooperation - constant caustic criticism.	

Testing Set invented - Improvements on Audio Amplifiers, Electro Cardiograph Amplifier etc.

Knows English language.

450 + 200

7-30-04.

13-2-53.

Dear Dr Krishna,

We saw Mr. Chandrabant. He repeated what Chandram said & said that he says & adamant not come for Education's recommendation says grant will be only 50%.

We saw Dr. Radhakrishnan just as he was leaving for Council of State at 2 P.M. and we saw him again at 7 P.M. Dr. Radhakrishnan said both at 2 P.M. & now that it was reduced to give $\frac{2}{3}$ of management is to find $\frac{1}{3}$ & when he saw Dr. Bhahmaji told him at Bevan's party after 5 P.M. that he had sent a telegram to Mr. J.T. about $\frac{2}{3}$ grant. He also said that it is not right to trouble the Prime Minister as he is worried as much as other courts & that Radhakrishnan may also hesitate to speak to Jyaji.

He asked us to meet Dr. Bhahmaji and Jyaji.

I shall meet you tomorrow morning before you go to office.

Yours ever
M. Srinivasagopal

Mr. M.K. Ranganathan, Principal, Madras Institute of Technology, and Mr. M.Subbaraya Ayyar, Secretary of the Council of Management, were here this morning, and I discussed with them various matters relating to the working of the Institute. After discussion they agreed to recommend to the Council of Management the following. They pointed out that they could convey their agreement in writing on behalf of the Council of Management only after that body had accepted the recommendations.

- (1) That the Council of Management shall consist of not more than 12 members, of whom two will be nominees of the Central Government, 3 of the Madras Government and 2 of the All India Council for Technical Education. The remaining 5 members will be:-

Founder or his nominee.

Principal or Director, ex-officio.

Two to be selected by the donors as defined in the rules of the Institute.

One eminent man of science and learning, industry or commerce to be nominated by the Central Government.

- (2) That a scheme of administration for the Institute will be drawn up with the approval of the Central Government, and the same will form part of the rules of the Institute and will be duly registered with the Registrar of Societies. Any changes in the scheme must be approved by the Council of Management in the first instance and finally by the Central Government before they could become operative.

- (3) The Council of Management will be prepared to reiterate their agreement to the reorientation of courses in consultation with the All India Board of Technical Studies in Engineering and Metallurgy (Such agreement has already been conveyed to the Government.)

(4) The Institute will be prepared to abide by the advice of Government in the matter of closing down or running of the Aeronautical Engineering Faculty at the Institute. In the event of a decision being taken to close down this Faculty, the Government will assist the Institute to place suitably the students already admitted to this course to enable them to qualify in the subject. To the extent possible, Government will ~~also~~ also assist in placing suitably the staff of the Institute.

(5) The Institute will agree to implement any suggestions that the Central Government might make on the basis of the recommendations made by the Visiting Committee. A copy of the report of the Visiting Committee will be sent to the Institute for guidance.

(6) The Institute will exert itself fully to securing grants and donations from other sources such as the State Government and public benefactors. They are however unable to say at the present time to what extent such contributions will meet the expenditure both capital and recurring.

2. I put it to the representatives of the Institute that Central Government would possibly agree to meeting 50% of the developmental expenditure and 50 % deficit on account of recurring grants, and that they should obtain the balance from the State Government and public benefactors. While assuring that they would do their best the representatives clearly pointed out that this was difficult of accomplishment. They felt that a ratio of 75:25 would perhaps be more practicable. I have told them that I do not see the

possibility of the Central Government agreeing to this ratio but that I shall get the question reviewed with a view to enhancing the contribution of the Central Government to two-thirds if possible.

No. F. 20-2/52-T-2
Government of India,
Ministry of Education.

New Delhi, the 20th March, 1952.

From The Secretary, to the Government of India.
Ministry of Education.

To The Principal,
Madras Institute of Technology,
Chrompet,
Madras.

Subject:- Madras Institute of Technology - Grant-in-aid.

Sir,

I am directed to inform you that the Government of India on the recommendation of the Co-ordinating Committee of the All India Council for Technical Education have agreed in principle to financially assist the Madras Institute of Technology towards the development of the institution as set out below subject to such re-organization as may be necessary on the recommendations of the All India Board of Technical Studies in Engineering and Metallurgy.

1. Provision of adequate facilities by way of workshops and laboratories for imparting instruction in General Engineering subjects and basic sciences at the basic year stage.
2. Provision of laboratories for training in
 - (i) Automobile Engineering
 - (ii) Electronics
 - (iii) Instrument Technology
3. Works.
 - i) Constructional work in one of the Bellman hangers for provision of additional accommodation for workshop/laboratory/class-rooms/drawing halls.
 - ii) ^{Improvement} ~~Imparting~~ to watersupply and pipe lines.

Towards this and the President is pleased to sanction an adhoc grant of Rs. 3,50,000 (three lacs & Fifty thousand only) to meet the immediate requirements of the institution for non-recurring expenditure without any commitment regarding the total amounts to be given as grant-in-aid. The grant is subject to acceptance of conditions given in Annexures I & II to this communication. It is further to be noted that no part of this grant shall be utilized for any activity in

any way connected with the work of the Department of Aeronautical Engineering of the Institute or towards making good the existing deficit in the financial status of the Institute in so far as that deficit is in consequence of the Aeronautical Engineering Department.

If the above conditions are acceptable to the Institute, the same should be communicated and the bill for the amount of grant sanctioned should be forwarded to this Ministry for counter-signature by Mr. G.K. Chandiramani, Deputy Educational Adviser (Technical) to the Government of India. Thereafter the completed bill should be presented for payment to Accountant General, Madras, before the 31st March, 1952, together with a certificate that the amount will be spent for the objects and purposes for which the grant has been made. A copy of the treasury receipt is also enclosed for the preparation of the bill. The amount is payable under the provision made in the budget of the Central Government under Demand No. "16- Other Scientific Departments - B1 - Grants and Donations - Grants to Engineering and Technological Institutions for 1951-52".

Yours faithfully,

Sd/-

(Biman Sen)
for Secretary.

Copy, with a spare copy, to the Ministry of Finance for communication to Accountant General, Madras.

The sanction has been accorded in consultation with Ministry of Finance vide that Ministry U.O. No. 27(I) EC/52 dated the 20th March, 1952.

Sd/-

(Biman Sen)
for Secretary.

ANNEXURE I.

CONDITIONS GOVERNING GRANTS TO MADRAS INSTITUTE
OF TECHNOLOGY.

1. That a fully qualified Director (or Principal) approved by the Co-ordinating Committee of the All India Council for Technical Education shall be appointed with suitable powers and that this appointment shall be made within a period of six months of the grant
2. That no part of the grant shall be utilised for the development or maintenance of the Aeronautics Faculty at the Institute.
3. That the Institute should agree to the re-organisation of the courses and syllabi by the Committee appointed by the All India Board of Technical Studies in Engineering and Metallurgy in consultation with the Director(or the Principal) when appointed.

ANNEXURE II.

CONDITIONS GOVERNING GRANTS TO TECHNOLOGICAL INSTITUTIONS

- i) In view of the fact that the All India Diplomas and University Degrees are expected to be approximately of equivalent standards, the syllabuses should, as far as possible be in accordance with the standards to be suggested by a Joint Committee of the Inter University Board and the All India Council for Technical Education. It is not contemplated however to encroach on the autonomy of the Universities.
- ii)
 - a) The non-University Institutions shall include in the Selection Committees appointed for the purpose of recruitment of staff, independent experts from the panels submitted by the Institution and approved by the All-India Council for Technical Education.
 - b) In the case of colleges or departments under the administrative control of universities, the appointment of staff shall be made by Selection Committee constituted in accordance with the Universities' Acts and rules, or if the appointment of selection committees is not specifically provided for in the University Act, the rules shall be framed with the approval of the Inter-University Board. In every case, the All India Council for Technical Education shall be acquainted with the rules and regulations for the selection and appointment of the staff.
- iii) For the non-University Institutions, equipment for laboratories of various types and workshops shall be generally as prescribed by the All India Council for Technical Education.
- iv)
 - a) A Visiting Committee or an Inspector appointed by the All India Council for Technical Education shall periodically visit the non-University Institutions receiving grants and report to the Council and Provincial Government concerned whether the grants given by the Government are being properly utilised and also whether proper standards of teaching and examination are being maintained.

- iv) b) In the case of University Department of Institutions administered directly by Universities, the University concerned shall appoint a Visiting Committee in accordance with its own rules. Where such rules do not exist already, the University will be required to frame them in consultation with the University Grants Committee. Such Visiting Committee shall inspect the institutions annually and report to the universities whether the Government grants were being properly utilised in accordance with the conditions laid down. The Universities shall forward copies of all such reports to the All India Council for Technical Education.
- v) Where degree course as well as Diploma course of definitely lower standard than the degree in the same subject are being taught, the capital and recurring grant shall be utilised for the promotion of higher Technical education only.
- vi) Recipients of recurring grant shall bring the salary scale of teaching staff and their qualifications to the level approved by the Central Government in consultation with the Provincial Government and/or Universities concerned, within three years from the date from which the first recurring grant is made.
- vii) In the case of non-University institutions, the appointing of Professors or Heads of Departments to permanent vacancies that may occur, shall be made within a period of six months and in accordance with the conditions laid down in (i) (a) above. The placing of the present incumbents on Professorial status or status of Heads of the Departments for which grants are being made by the Government shall also be subject to the approval of the Council.
- viii) The Central Government shall determine in consultation with the Provincial Governments and institutions the quota for each Province

for purposes of admissions to the institutions concerned.

- ix) Capitation fees shall not be charged in respect of students admitted under the quota system fixed by the Central Government.
- x) a) The Central Government shall have at least two seats for its nominees on the Managing Committee or the Governing Body of non-University institutions and the All India Council for Technical Education shall also have two seats thereon. The Principal or the Head of the institution shall be an ex-officio member of the Managing Committee or the Governing Body. In all Institutions there shall be constituted a College Council on which will be represented the Principal and all Heads of Departments. All academic matters pertaining to the College will be considered by this Council, and the proceedings of the Council shall be submitted to the Managing Committee or the Governing Body as the case may be. The Council shall meet at least twice a year.
b) In case of University Institutions where there is an advisory Committee the All India Council for Technical Education and the Central Government will be represented on it- Where there are no Advisory Committees, the All India Council for Technical Education shall have the right to appoint an ad-hoc Visiting Committee for the purpose of reporting how the grants given to the institutions were being utilised.
- xi) The institutions should exercise the utmost economy in their working, as also in respect of expenditure from the grants for buildings and equipment.
- xii) Such of the equipment as is available in Government surplus stores shall be obtained from that source, and no orders for supply of equipment shall be placed elsewhere without first obtaining a certificate from the Director General of Disposals to the effect that he is

- unable to arrange supply of the articles in question.
- xiii) All expenditure to be met out of the grants shall be sanctioned by the Governing Body of the institute or other duly constituted body which ordinarily sanctions such expenditure or by the officers of the institution within the limits of specific authority delegated to them.
- xiv) Grant under a particular head shall not be utilised for a purpose other than that for which it is intended except with the previous approval of the Government of India.
- xv) A copy of the yearly statement of accounts of the institution duly audited and showing the amounts spent for the purposes for which grants are made shall be furnished to the Government of India.
- xvi) Where a grant has been given by the Central Government under specific conditions accepted by a University or an institution, the University or institution concerned shall if it does not comply with those conditions, be liable to refund the grant already received, in such manner as may be required by the Central Government and further grants shall be stopped.

"Chawla".
28.5.5.2.

The recommendations which I make for the consideration of the Committee of Management of the M.I.T., in regard to the remuneration and other incidental amenities to the foreign members of the teaching staff of the M.I.T., are set out below:

The Secretary Mr. M. Subbaraya Aiyar and myself met the Professors Messrs. Repenthein, Wallauschek and Filipowsky at 12 Noon on the 15th January 1952 at Chromepet. We had a full talk with the Professors as to their views. In the discussion I made it plain to them that individual cases on the individual circumstances, qualification, previous experience and the practical work done by each of them, their age and the family obligations of each, will have to be considered independently. The following I suggest to the Committee for adoption:

REPENTHEIN: Present Pay: Rs.1,250 which is made up of three items: Basic pay of Professor Rs.850 in the grade for all Professors plus Rs.200 Overseas Pay and Rs.200 personal pay.

Recommended Pay: Basic salary Rs.1000/- in the grade plus Overseas allowance Rs.200 plus Rs.200 = Rs.1,400/-.

WALLAUSCHEK: Present Pay: Rs.1,150/-

Recommended Pay: Rs.1050 plus Rs.200 plus Rs.200 Total Rs.1,450/-

FILLIPOWSKY: Present Pay: Rs. 1,100.

Recommended Pay: Rs.1,400.

The Professors agreed with the above.

Period of Contract: Question was discussed as to whether period is to be three years or

five years. It was agreed that it is to be five years and it is left to the option of the Professors to consider and say whether the commencement of the five year period is to be from the date of their joining duty in M.I.T., or from this date.

LEAVE:

The question as to the Professors accumulating the leave due to them under the present rules during the period of the contract and availing themselves of such leave before the end of the period of the contract ^{and} spending ~~the~~ ^{leave} their ~~time~~ in Europe. I told them that it could be availed of and usual rules which Government follow in this regard when foreigners are entertained in service might be followed. They agreed to it. The Professors raised the question also of the cost of passage for return home. The Secretary pointed out that in the existing contract with some of the Professors, there is provision for payment of return passage money in the event of the renewal of the contract. The Professors wanted payment irrespective of the contract being renewed and their joining service again after the five years. They also raised a question of passage money to their wives and children. I told them that though the passage from Europe to India for themselves and wives and children were paid and that is worked out during the period of the contract to repeat the same when they go back does not stand on the same footing and that I would suggest that the rules which the Government follow in similar cases may also be followed. The Professors agreed to this also.

SPONDOR: He ~~xxx~~ has a Doctorate degree and his
academical qualification is high. I sugges-
ted that Rs.650 may be the basic pay in the
Assistant Professor's grade with Rs.200
personal allowance and Rs.200/- Overseas
allowance in all Rs.1,050/-.

SCHOLES & WALTER FIALA: Both of them ^{are} sand on the same
footing and their cases are considered ^{together}
They are also to be in the grade of Asst.
Professors with the basic pay of Rs.500
in the grade of Assistant Professors with
Rs.200 Overseas allowance and Rs.200 perso-
nal pay in all Rs.900. I have not been
able to meet them as they were away.

SUSZKIN: I had a talk with him. He has not yet
picked up sufficient English knowledge
to lecture to the students. Wallauschek
mentioned about his qualifications as a
practical Scientist and that his assistance
would be very useful to him and he is
proficient in high Vacuum technology.
Though he has not designed new instruments,
he has been engaged in manufacturing meson
counter and such scientific instruments.
He is anxious to do research work in that
direction. He might also be as Asst. Pro-
fessor with the starting basic salary in ~~the~~
that scale with Rs.200 Overseas allowance.
If he was in a position to lecture and had
picked up sufficient English language
for that purpose, I would have considered
some increase over the figure. I ~~think that~~
I put it to Mr. Suszkin himself that taking
all the ~~circumstances~~ into consideration

this would be a reasonable solution. Though at first he hesitated, after a further discussion, he agreed. The question of allowing him to do research work was then mentioned. I said that if particulars of research in which he was interested are fully set forth in a Memo and an application made to the Council of Scientific Research, I would help in the Committee considering same and making a grant which would be useful to Mr. Suszkin.

The above new scales of pay will come into force from the next financial year commencement from 1-3-1953.

MADRAS INSTITUTE OF TECHNOLOGY, CHROMEPET.

Dr. R. R. WALLAUSCHER, B.S.D.Sc., (Prague), Professor of Instrument Technology.

SYNOPSIS OF THE PROJECTED RESEARCH WORK IN INSTRUMENT
TECHNOLOGY FACULTY.

1. Research Work which can be begun with the actual equipment of the M.I.T., and which can be continued with relatively moderate means:

1) Effects on Gas jets of Supersonic Velocity

- (a) Generation of supersonic velocity in Gas by issuing from a nozzle (high pressure generation) and by utilisation of the Cuanda-effect (low pressure generation),
- (b) application to Industrial blending
- (c) application to Carburetting (crude oil carburetting) and other gasification
- (d) generation of supersonic oscillations (Hartmann Generator)

2) Effects of Supersonic oscillations in gaseous and liquid mediums

- (a) Power generation of supersonic oscillations for industrial application (Hartmann generation and magneto strictive oscillations)
- (b) application to industrial blending
- (c) " " gasification problems
- (d) " " telecommunication and range finding systems

2. Industrial Research work which can be undertaken with the equipment that has been sanctioned for the session 1951-52.

1) Design and prototype manufacture of electrical industrial measuring instruments:

- (a) Moving coil and moving iron voltmeters and ammeters (prepared in the lectures and practical works of the session 1950-51)
- (b) Electric meters (energy meters)

2) Design of an electro-magnetic microbalance

3) Manufacture and development of hyper-frequency measuring apparatus (subject of lectures of the session 1951-52).

(required by D.M.E.,/AIRQ, India, New Delhi for Radar research

(contd.)

3. Research of hyper-frequency properties of dielectric and metallic mediums (collaboration with Indian chemical and metallurgical industry).
4. Investigation of a pistonless two phase pump and its application to refrigerators.
5. Further projects requiring more ample means and larger preparations^a
 - 1) Optical lens and lens system manufacturing and research.
 - 2) High vacuum technics (with the aim of preparing for the manufacture of electronic tubes
 - 3) Electron optic research work, electronic microscope and mass spectrograph
 - 4) Special hyperfrequency tubes

References to previous research work:-

1) Publications:-

- (1) Zur ~~Kant~~ Theorie ^{der} des Elektronenmikroskopes mit Anwendung auf rein magnetische Felder, ZS. f. Physik Vol.94 (1935) 329
- (2) Elektronen optische Fokussierung durch quasistatische Bahnen, ZS.f.Physik Vol.117(1941)565
- (3) Messung Kleiner Leistungen in der Bolometerbrücke, EMT vol.18 (1941)247
- (4) Sur un amplificateur électronique à onde guidée dans un milieu de constante diélectrique élevée, Comptes rendus de l'academie des sciences, Vol.224(1947) 191-193
- (5) Sur la theorie des amplificateurs à ondes progressives, L'Onde Electrique No.242(1947)
- (6) Etude experimentale de la propagation lelong d'une ligne à retard en forme d'hélice, Ann.des Télécommunications Vol.3 (1948) No.8-9
- (7) Détermination experimentale des caractéristiques d'amplificateurs à ondes progressives, Ann.des Télécommunications vol.3(1948) No.8-9
- (8) Réalisation et d'un générateur de mesure hyperfréquence étalonné 2500-5000 Mc., Ann.des Télécommunications vol.6 (1951) (in the press)
- (9) Resultats obtenus avec tubes à onde progressive, Ann.des

Page .3.

Telecommunications Vol.6(1951)(in the press)

2) Unpublished works in ultra-sound research (1943-44) in the
German Ministry of Armaments

3) 18 patents and patent applications.

MADRAS INSTITUTE OF TECHNOLOGY, CHROMEPET.

Proposals for research activity in the Electronics Faculty,
M.I.T., Madras.

General Remarks:

Any research activity is to be based on the following requirements:-

(a) The aim of research work has to be clearly specified and arranged and the activity must be within the scientific capacity of the staff and the equipment. This specification however must never restrict the research worker to a too narrow field of observation. On the contrary the general background of knowledge of the research worker should permit him to recognise any unexpected results in sciences not regularly covered by his activity.

(b) Before starting the research work a careful documentary search has to be started disclosing all previous work done in this line. Contradictory results of all predecessors have to be examined carefully and all unsolved or doubtful problems must clearly be recognised as such.

(c) Well proved equipment must be available and should be tested at regular intervals. Percentage of error of any instrument or calculation involved in research must clearly be stated and taken into account.

(d) The presentation of research procedure and results ~~may~~ must be done in such a way that the reproduction of the results is easily possible at any later time or at any other place. Therefore an accurate observation of all conditions under which the experiment was done must be noted in the records. These requirements are fulfilled to a high degree in the Electronics Faculty of the M.I.T., as may be seen from the following statements:-

2. Staff for Research:

(a) Our Professor Mr. R. Filipowsky, Head of the Department work for 11 years as Research Engineer and Chief of Laboratories in Berlin, Austria and Lisbon (Appendix 1 & 2 for his publications and patents). His academical education was in the field of applied Physics, which gave him the necessary baord background mentioned under requirement 1(a).

(b) The first lecturer Mr. K. K. Clarke has done for two years research work at the Brooklyn Polytechnique Institute after having secured his M.Sc. Degree from Stanford University. He proved already during his

(contd.)

4 months' stay in our Institute that he has excellent qualifications for research work and that he is in particular a very careful observer. His skill on the practical side may help us for the construction of every accessory necessary for research.

(c) The second lecturer - Mr.P.V.S. Sastry has got an excellent training in research at the Indian Institute of Science.

(d) Some of the students (at least 6 from the Senior Class) have developed already a fairly good capacity for research. All the students are trained regularly in a weekly seminar for understanding and abstracting scientific publications. They have to deliver exact records of every measurement done in the Laboratory and high emphasis is laid on the accuracy with which they report on all the conditions under which the experiment was conducted. Moreover they are trained for designing simple types of electronics equipment.

(e) 4 mechanics working here have proved their ability for elaborating electronic equipment designed in our Institute and for conducting any difficult mechanical work, which might be necessary for constructing experimental apparatus for research. We finished here already apparatus like Dynamic demonstrator white bend amplifier RC - Oscillator, Cable finder etc.,

3. Equipment for research: At present we have 35 large electronic measuring ~~wire~~ units (like generators, bridges, oscillographs, frequency meters, crystal oscillators, monitors etc.,) at our disposal. At least the same number of instruments will be additionally available after some small service work is done. Our store contains more than 1000 electronic tubes of 58 different types including 35 cathode ray tubes and many high power transmitting tubes; also all other components needed for electronic purposes are in stock. This, together with the design experience of our staff places us in a position where we can build in our own Workshop in a fairly short time practically every type of electronic instrument.

A strong system of supervision in the Laboratory gives us the guarantee that every research equipment is tested and checked at regular intervals and that any error in instruments is discovered as

(contd.)

soon as possible. Thus we hope to fulfil the requirement (1(c)).

4. Documentation Services: A unique card index with 150,000 entries enables us to try all the published contributions of any particular research problem within some minutes (for details see Appendix 3). Large private libraries of our professor and his lecturers containing important complete sets of Journals may help us to find original papers. So we are sure to fulfil also requirements under 1(b).

5. Preferred subjects for research: We would welcome any suggestions from highly authorised Indian Institutions indicating the range of electronic research, which at present may be urgently needed for India. We think we could start on any subject preferred by our advisers. As far as choice could be left to us we may mention:-

(A) Auto Engineering:

(a) Investigation of the pulse character of voice signals. Development of electronic relays sensitive to particular voice sounds only. Investigation of the interdependence between the exact waveform of voice sounds particularly their duration and the intelligibility of voice communication.

Applications. Interesting results for phonetic science. Fundamentals for narrow band voice communication systems.

(b) Magnet tape recorders. These are used more and more in broadcasting and in commercial and private recording equipment. The possibility of erasing any recorded signals opens enormous applications, but still there is one difficulty. So far it has been easy to erase a particular word or one phrase only or to replace a small portion of any recorded performance by an improved version. An automatic switching and signalling arrangement can do this. Patent for this purpose has been applied for in Portugal by Professor R. Filipowsky as Inventor.

(B) Communication Engineering:

(a) Narrow band width communication. The most serious obstacle against denser radio communication traffic is the scarcity of available channels. A reduction in the band width of the commercial channels at least for voice communication could improve the conditions considerably. Our Professor R. Filipowsky has done research work on

these lines. (Details may be given on request). The research can be in connection with subject A(a). Possibilities for goods results exist for telegraphy mixed with voice communication in the same channel for multi-channel voice communication and for frequency modulated signals.

(b) Short wave reception with reduced noise level.

(1) The second obstacle in short wave communication is the noise problem. The atmospheric noise is the most disturbing element. As its fundamental wave form is different from the useful signals coming from the transmitter it is not impossible to construct any amplifying wide band amplifier technique.

(C) ~~EE~~ Television Engineering: For television the same difficulty ~~may~~ may arise sometimes as we see it at present for audio communication. The need for a reduction in band width: Possibilities to do this are numerous, the technical equipment however seems to become more and more complicated when the same picture quality should be achieved with smaller band width. These different possibilities have to prove their relative advantages. Prof.R.Filipowsky has worked for years in television research and most of his patents and publications are in this subject.

(D) Electronic Instrumentation: This range needs more a design activity than real research work. But we are in a position to develop any type of research instrument which may be needed in other research institutes, (radiation meters, cosmic ray detectors, oscillographs of any type electronic calculating machines etc., etc.,). At present we are developing a large number of such instruments for our own purpose. We can extend this activity at any time.

(E) Geophysical Research: Our Professor R.Filipowsky has done some interesting experiments on electro-magnetic short wave propagation within the Austrian mountains and he would like to continue this research. In 1947 he was able to achieve remarkable results, but since that time he could not prosecute this idea any more. The importance of radio and radar methods for surveying and prospecting for a country like India cannot be over-emphasised and some work could certainly be done anywhere in India on these lines. But it should then be necessary to bring together experienced Geophysicists and electronic research Engineers.

(Contd.)

(F) Fundamental Research: Besides all this abovementioned works which fall more under the group of applied research, we would like to start any type of fundamental research which could run over years. We should start even with a subject which might have immense importance in ten or start even with a subject which might have immense importance in ten or twenty years only and work with the greatest perseverance along these lines without publishing any intermediate results until we go ahead of the other nations. Such possibilities exist in the range of electromagnetic waves between micro wave and ultra-red radiations or in the practical application of cosmic rays for communication purposes or in electromagnetic energy transmission.

(G) Miscellaneous Research & Design Activity: Apart from all these specified research problems we are starting already now with the third year students a particular schedule of design work. Every student has to work for several months on the design and construction of one particular type of electronic equipment. It might be useful to combine these schedules with any ~~projects~~ programme for research so that small units for the research plan can be made by the senior students within this schedule. Many small independent research problems like observation of cosmic noise of wave propagation or like investigation of particular types of circuits like blocking oscillators, counting circuits etc., can be solved on these lines.

Conclusion: We hope that this short summary may be sufficient to convince anyone interested in research centres of our possibilities. We started our work only one year ago and still we have to instal and improve a lot in our Department but we hope that the results achieved so far may contribute to bring the necessary confidence regarding our ability to any outsider.