2. METHODOLOGY

2.1 General

There are four ways of knowing about the facts or fixing our beliefs about various matters. They are tenacity, intuition, authority and science. In the present study certain scientific methods are followed to study the nature of formation of scientific and technical terms in Tamil. There are two reason for conducting research (1) to discover or to learn more about the basic laws of nature and (2) to apply this basic knowledge to the solution of practical problems. The first kind of research is called basic or fundamental research, and the second one is called applied or direct research.

The methodology adopted in the present study belongs to the second type of research discussed above. The theoretical contributions made in the fields of general linguistics, sociolinguistics, translation principles, discourse analysis and statistics are applied in order to have an understanding of the nature of the processes used in the development of scientific discourse in Tamil.
2.2 Preparation of questionnaire

The present study has taken up the physics text books of Tamil and English media, used in higher secondary schools of Tamil Nadu for the purpose of analysis. All the technical terms have been collected from the text books of both the media. Those technical terms collected thus served as the basis for the preparation of questionnaires for the study. Similarly portions or passages of scientific discourse have been collected from these text books randomly. These samples served as the basis for the preparation of questionnaire for this study. Technical terms from both Tamil and English languages find equal importance in this questionnaire. Likewise passages of discourse were also given in the questionnaire. The questionnaire prepared in this manner was given to the informants for the purpose of data collection. The researcher asked the informants to translate the given technical terms and scientific discourse from English to Tamil. The data collected thus were processed for analysis. A master chart showing the various technical terms was prepared and from this, the variation found to occur in the use of technical terms were assessed. An attempt to study the nature of the standardization process undergone by the technical term was also made with the data collected in this
manner.

2.3 Selection of informants

Informants were selected from three categories namely, (1) Teachers, (2) Popular science writers and (3) Common people. Teachers who teach physics subject in higher secondary schools and colleges have been selected as informants for this study. Popular science writers have also been included as informants for this study and their views have also been included.

2.4 Sampling frame

Informants are broadly classified into 3 groups these three groups of people namely (1) Teacher's (2) Popular science writers and (3) common people constitute the universe for this study. The sampling frame used in this study could be called as purposive sampling. The science teachers who teach the subject physics at the higher secondary level have been selected to act as informants for this study. Science writers who are engaged in writing popular articles on science in Tamil and help the spread of scientific knowledge have been selected as informants. Informants representing the common people who show interest in science writing in Tamil were also selected.
2.5 Selection of sample

Making use of sampling frame discussed above, informants for this study have been selected. While selecting the informants from the category of teachers care was taken to see that they had studied physics as a major subject at the college level and are currently engaged in teaching physics through Tamil medium to the students. Similarly, while selecting the authors of popular science writings in Tamil, precaution was taken to see that they regularly write articles in Tamil on matters related to Physics. Authors writing in newspaper columns and in science magazines were selected as informants. From the common public those who show interest in reading science articles in Tamil have been selected as informants.

2.6 Data elicitation

After the questionnaires were prepared they were either sent to the informants through post or delivered personally. The informants were asked to translate the English technical terms into Tamil. Likewise, some passages depicting scientific discourse in English were also given in the questionnaire and the informants were asked to translate them into Tamil. By this way data were elicited.
2.7 Data processing

After the elicitation of data using the questionnaire, the data were arranged for the purpose of processing. There are three stages through which the raw data must be processed. They are (1) Editing, (2) Classification and (3) Tabulation.

2.8 Data analysis and interpretation

After the data processing stages are completed, the analysis and interpretation of research work are undertaken. In this study data are analysed based on translation principles and procedures. Passages related to scientific discourse are also analysed with the help of the methodology evolved for the analysis of discourse. An attempt has been made to quantify the data and present statistic picture about the standardization of scientific technical term. Based on statistical analysis. A number of tables have been prepared. These tables enabled the researcher to interpret them and to have certain findings related to the problem.