R. M. Sapre, A speech processor for single-channel auditory prosthesis, M. Tech. Thesis, Department of Electrical Engineering, Indian Institute of Technology Bombay, 1992.

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Abstract – Single channel auditory prosthesis is a practical solution to enhance the lip-reading skill used by the deaf. The objective o f the project was to come up with a speech processing scheme for single channel auditory prosthesis, after critically examining the existing schemes, in the light of phonetic features of Indian languages.

A speech processing scheme that presents some information about unvoiced segments of speech, along with intonation and rhythm information during voiced sections is developed. This scheme is based on a scheme for single channel cochlear prosthesis proposed in the literature. A method for mapping random pulses from one band to those confined to a lower band was designed, tested, and incorporated in the off-line implementation of the scheme.

Two sets of twelve vowel-consonant-vowel syllables spoken by a male and female speaker were processed and used for informal listening tests. The discriminating features between each pair of sounds within the sets were noted down by author to prepare qualitative confusion matrices. The results indicate that the features like manner of articulation, voicing aspiration along with some spectra information about unvoiced fricatives can be presented.