

**MIXING OF JET IN A STREAM**

**By**

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(1)

CERTIFICATE

This is to certify that the thesis entitled, 'Mixing of Jet in a Stream', which is being submitted by Mrs. Rema Devi to the Indian Institute of Technology, Delhi for the award of the degree of Doctor of Philosophy, is a bonafide research work carried out by her under my guidance.

The results contained in this thesis have not been submitted, in part or full, to any other university or institution for the award of any degree or diploma.

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ABSTRACT

Jet and stream combinations are used and can further be used for a variety of practical applications. The wall jet, defined as a jet the spread on one side of which is inhibited due to the presence of a boundary, has been investigated in this context by a large number of research workers. Yet, in almost all cases the wall jets investigated had zero degree inclination. Oblique wall jets, which can have several practical applications have not been investigated.

A weak oblique wall jet in a uniform stream is investigated experimentally in the present work for five ratios of jet to stream velocity and two angles of inclination, one normal and one partly opposing the main flow. The issues of interest are, (i) the development of flow characteristics along space, (ii) the applicability of a few models of turbulence and (iii) the possible use of such a flow combination as an energy dissipation arrangement. The study with the large number of velocity ratios investigated is expected to help in the formulation of a working model of turbulence for real life application.

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