# Journal of the Indian Institute of Science, Bangalore 560 012, India

## [ Section A: Engineering and Technology ]

Volume 60

Number 7

July 1978

## CONTENTS

### ORIGINAL PAPERS

Page

Oil Hydraulic Systems

Analysis and design of cushioning in hydraulic cylinders

S. N. Rao and A. G. Mohamed Sanaullah 271

Metal Fatigue

LOW-CYCLE FATIGUE STUDIES ON COMMERCIAL ALUMINIUM IN COMBINED BENDING AND TORSION

A. S. Bhandwale and P. Vasudevan 283

Nonlinear systems

STABILITY OF NONLINEAR SYSTEMS via BELLMAN-GRONWALL LEMMA

J. S. Ansari 293

#### SHORT COMMUNICATION

Fluid Mechanics

WALL TO FLUID MASS TRANSFER IN TURBINE AGITATED VESSELS

M. S. Murthy, M. Balakrishna and J. S. N. Murthy 299