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(54) Title of the invention : SYSTEM TO MEASURE SOUND ATTENUATION CHARACTERISTICS OF CAVITY BACKED PERFORATED ACOUSTIC LINER IN PRESENCE OF GRAZING AND BIAS FLOW

(51) International classification :F02K0001820000, F02C0007045000, F02C0007240000, A61M0016080000, G10K0011172000 (86) International Application No :NA Filing Date :NA (87) International Publication No : NA (61) Patent of Addition to Application Number :NA Filing Date :NA (62) Divisional to Application Number :NA Filing Date :NA	(71)Name of Applicant : 1)INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD Address of Applicant :Dhanbad - 826004, Jharkhand, India Dhanbad ----- Name of Applicant : NA Address of Applicant : NA (72)Name of Inventor : 1)NANDAN KUMAR JHA Address of Applicant :Department of Mechanical Engineering, Indian Institute of Technology (Indian School of Mines), Dhanbad, Dhanbad – 826004, Jharkhand, India Dhanbad ----- 2)VIKRAM Address of Applicant :Department of Mechanical Engineering, Indian Institute of Technology (Indian School of Mines), Dhanbad, Dhanbad – 826004, Jharkhand, India Dhanbad ----- 3)RABINDRA NATH HOTA Address of Applicant :Department of Mechanical Engineering, Indian Institute of Technology (Indian School of Mines), Dhanbad, Dhanbad – 826004, Jharkhand, India Dhanbad -----
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(57) Abstract :

The present invention relates to system (100) for measurement of the sound attenuation characteristics of a cavity (1) backed perforated acoustic liner (16) in the presence of a grazing flow and a bias flow, more particularly, to test the damping capability of the liner (16) to be used inside afterburner of a turbojet engine of a jet fighter in the presence of grazing and bias flow. A grazing blower (10) and bias blower (11) are connected with the impedance tube (2) and to the cavity (1) to provide mean (grazing) flow and bias flow, respectively. A grazing (4) and a bias flow settling chamber (5) are mounted on grazing and bias flow supply lines, wherein the flow from the chamber (5) is quad-furcated (6) using hose pipes (7) and to the backing cavity (1). Two plenum chambers (8, 9) in the path of the blowers (10, 11) are employed to eliminate pulsations in the flow. Loudspeakers (3) are attached at the upstream end of the tube (2) to generate plane waves. The damping ability of the liners (16) is quantified in terms of sound absorption coefficient in the presence of grazing and bias flow. A test facility has been invented based on the screech frequency and flow range.

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