

(54) Title of the invention : Design and development of a low noise next generation air-foil with conventional wavy leading edge and curved wavy trailing edge tubercles for enhancing the mitigation of broadband noise

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(57) Abstract :  
The present invention is aimed at developing low noise (i.e., ultra quiet) air-foils of the next generation to achieve quieter operation of machines involving air-foil-shaped parts such as fans, propellers, wind turbines, wings etc. The level of noise reduction obtained in air-foils with conventional wavy tubercles at the LE and curved wavy tubercles at the TE is expected to be higher when compared with conventional wavy tubercles on both the edges (LE and TE). This is demonstrated by conducting noise measurements in an anechoic open jet wind- tunnel on a NACA65 (12)-10 air-foil with (i) conventional-wavy LE and TE tubercles and (ii) conventional wavy-LE (leading edge) tubercles and curved-wavy TE (trailing edge) tubercles. Fig 3

No. of Pages : 23 No. of Claims : 6