عنوان مقاله:

On the Use of a Home-Made Water Column for Evaluating the Drag Reduction Efficiency of Polymeric Coatings in External Flows

محل انتشار:

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خلاصه مقاله:

The efficiency of a new polymeric coating called polydimethylsiloxane (PDMS) in reducing the friction drag in external flows has been investigatedexperimentally using a home-made water column. To that end, a scaled 1/5 model of a typical axisymmetric body of a given shape was fabricated from aluminum and placed in the test cell of the water column. The drag exerted on the model was measured using a calibrated load cell at different Reynolds numbers with and without the polymeric coating. The difference between the two sets of data, at the same Reynolds number, shows that this particular polymer coating is well capable of reducing the friction drag by as much as 2 to 3%. The results obtained in this work also shows that the water column developed in the present work competes well with conventional drag-measuring devices such as water tunnels and towing tanks in terms of accuracy.

کلمات کلیدی:

drag reduction, water column, water tunnel,polymeric coatings