

# Polymer drag reduction with surface roughness in flat-plate turbulent boundary layer flow

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Petrie et al. (2003) presents a study of the effects of surface roughness on slot-injected and homogeneous polymer drag reduction. The polymer injection slot used in this study, shown in Fig. 2 of the paper, was developed by Moore et al. (2002) who holds a patent on this device. Appropriate credit for the development of this injection slot was not acknowledged in the paper. A detailed discussion of the features of this injection slot, its theory operation, and its utility can be found in Moore et al. (2002).

## References

- Moore K, Ryan T, Gorban V, Babenko V (2002) "Method and apparatus for increasing the effectiveness and efficiency of multiple boundary layer control techniques," U.S. patent No. 6357374. See <http://patft.uspto.gov/netahtml/srchnum.htm> to search for this patent by number
- Petrie H, Deutsch S, Brungart T, Fontaine A (2003) Polymer drag reduction with surface roughness in flat-plate turbulent boundary layer flow. *Exp in Fluids* 35:8–23