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Development of Drag Reducing Polymer of FDR-SPC INWON LEE, HYUN PARK, HO HWAN CHUN, Pusan Natl Univ — In this study, a novel FDR-SPC (Frictional Drag Reduction Self-Polishing Copolymer) is first synthesized in this study. The drag reducing functional radical such as PEGMA (Poly(ethylene) glycol methacrylate) has been utilized to participate in the synthesis process of the SPC. The release mechanism of drag reducing radical is accounted for the hydrolysis reaction between the FDR-SPC and seawater. The types of the baseline SPC monomers, the molecular weight and the mole fraction of PEGMA were varied in the synthesis process. The resulting SPCs were coated to the substrate plates for the subsequent hydrodynamic test for skin friction measurement. A significant reduction in Reynolds stress was observed in a range of specimen, with the maximum drag reduction being 15.9% relative to the smooth surface for PRD3-1.

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