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(54) **Title**: USE OF SURFACTANTS HAVING AT LEAST THREE SHORT-CHAIN PERFLUORINATED GROUPS FOR MANUFACTURING INTEGRATED CIRCUITS HAVING PATTERNS WITH LINE-SPACE DIMENSIONS BELOW 50NM

(57) **Abstract**: The use of surfactants A, the 1% by weight aqueous solutions of which exhibit a static surface tension <25 mN/m, the said surfactants A containing at least three short-chain perfluorinated groups Rf selected from the group consisting of trifluoromethyl, pentafluoroethyl, 1-heptafluoropropyl, 2-heptafluoropropyl, heptafluoroisopropyl, and pentafluorosulfanyl; for manufacturing integrated circuits comprisingpatternshaving line- space dimensions below 50 nm and aspect ratios >3; and a photolithographic process making use of the surfactants A in immersion photoresist layers, photoresist layers exposed to actinic radiation, developer solutions for the exposed photoresist layers and/or in chemical rinse solutions for developed patterned photoresistscomprisingpatterns having line-space dimensions below 50 nm and aspect ratios >3.By way of the surfactants A, pattern collapse is prevented, line edge roughness is reduced, watermark defects are prevented and removed and defects are reduced by removing particles.