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Capacitance of the Parallel Plate Capacitor Filled with Multiple Dielectric Slabs and its Electricity Analysis SEHA CHOI, RICHARD KYUNG, CRG (Choice Research Group) — In recent years, the development of the hybrid microelectronics technology in electrical and energy engineering has been arising in many technological fields. In this research, we showed the influence of the multiple dielectric slabs inserted in one capacitor on the electric field distribution in the capacitor system. We considered two cases: one case in which multiple dielectric slabs are perpendicular to electric field lines, and the other case in which the slabs are parallel to electric field lines. In this paper, capacitance of the parallel-plate capacitor filled with multiple dielectric slabs perpendicular to the electric field lines was compared to capacitance of the capacitor filled with multiple dielectric slabs parallel to the electric field lines to evaluate its efficiency. Patterns of the capacitances were found, and the electric field between the plates was calculated based on the capacitance. Also, to validate its efficiency and effectiveness, coding techniques were employed to find the equivalent capacitance.

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