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THE INVESTIGATION OF THE COLORIMETRY TO MEASURE THE DEPOSITION THICKNESS ON THE PLASMA-FACING WALL IN QUEST

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Abstract: *A convenient innovative method named colorimetry is tried to be applied to the Kyushu University Experiment with Steady-state Spherical Tokamak (QUEST) tokamak to measure the film thickness of deposition on the plasma-facing wall. The colorimeter can measure the reflectivity of R-color, G-color and B-color in the same time. The reflectivity is related with the film thickness and complex refractive index of deposition. In this paper, the result of thickness of the deposition measured with colorimeter is compared with that from the reflectivity measured with ellipsometer. They agree quite well with each other. The result shows that it is feasible to apply colorimeter to the measurement of film thickness of deposition. This lays the foundation for the further study of application of colorimetry to the QUEST tokamak.*