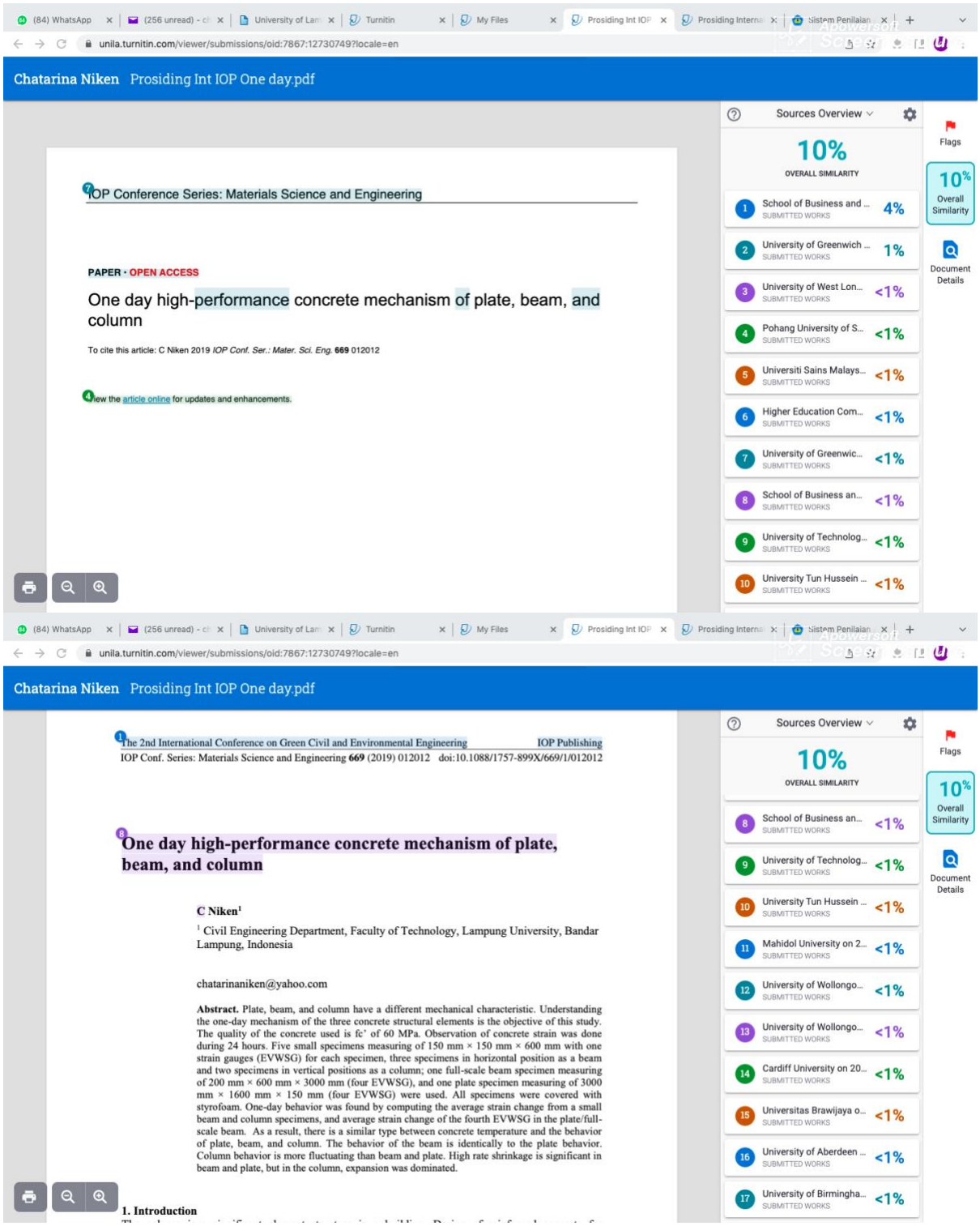
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One day high-performance concrete mechanism of plate, beam, and column
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Abstract. Plate, beam, and column have a different mechanical characteristic. Understanding the one-day mechanism of the three concrete structural elements is the objective of this study. The quality of the concrete used is fc' of 60 MPa. Observation of concrete strain was done during 24 hours. Five small specimens measuring of 150 mm × 150 mm × 600 mm with one strain gauges (EVWSG) for each specimen, three specimens in horizontal position as a beam and two specimens in vertical positions as a column; one full-scale beam specimen measuring of 200 mm × 600 mm × 3000 mm (four EVWSG), and one plate specimen measuring of 3000 mm × 1600 mm × 150 mm (four EVWSG) were used. All specimens were covered with styrofoam. One-day behavior was found by computing the average strain change from a small beam and column specimens, and average strain change of the fourth EVWSG in the plate/full-scale beam. As a result, there is a similar type between concrete temperature and the behavior of plate, beam, and column. The behavior of the beam is identically to the plate behavior. Column behavior is more fluctuating than beam and plate. High rate shrinkage is significant in beam and plate, but in the column, expansion was dominated.
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