

## **SIMULATION OF PRE-BREAKDOWN PHASE OF ELECTRICAL DISCHARGE IN REINFORCED CONCRETE**

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The possibilities of electrical discharge technology implementation for reinforced concrete destruction for its recycling is considered. Advantages in comparison with the mechanical methods is that the electrical discharge channel acting as rock-breaking tool has an unlimited service life, and the lifetime of electrode systems is much higher. The physico-mathematical model of the discharge development is described. The simulation results of discharge channel propagation velocity and trajectory depending on reinforcement locality and voltage amplitude are presented. Increasing the voltage effects on average speed of the discharge structure development that reaches the speed of up to  $v = 5 \cdot 10^3$  m/s. It is also shown that the reinforcing elements located between electrodes attracts the discharge growing structure. The less the distance between the high voltage electrode vertical axis and the metal reinforcement position the more probability that discharge channel will orient towards this element.

**Keywords:** *breakdown, discharge channel, reinforced concrete destruction.*