

# The Development of Modern Discharge Electrode in Electrostatic Precipitation: A Systematic Review

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*Abstract* — Effective particle charging is an important criterion of particle capturing technique in the process of electrostatic precipitation. The particle charging performance depends on size, shape, orientation, material, corona generation, and the stability of continuous operation of discharge electrode. Researchers are continually working in the field of electrostatic charging to improve particle charging efficiency towards achieving maximum efficiency in capturing sub-micron particles. This research paper aims to investigate the progress made in developing modern discharge electrode in electrostatic precipitation through a systematic literature review. Objective: This research will help to determine the dominating factors in the particle charging process. In other words: how these particle charging factors can be combined to develop an effective discharge electrode in electrostatic precipitation. Methodology: This research will perform a systematic review carried over in four-steps: 1) relevant literature and patent will be identified by using key words searches; 2) four criteria – proven applicability, relevancy, correctness, and credibility – will be applied to refine the selected literature; 3) findings will then be summarized in tables, graphs, and charts; and 4) finally, the findings will be interpreted and evaluated by synthesizing them into their performances. Key words: discharge electrode, electrostatic precipitation, sub-micron particle.