

# Applications of Electrical Fields in Chemical Processes

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*Abstract* — In our high-tech electronics age, we find electronics and applications involving electrical fields are pervasive throughout society and industry. Most electrical field applications familiar to the general population is through devices such as radios, radar, and microwaves. The electrical fields in the chemical processing industries have followed similar trends, for example, by using microwaves to heat chemical reactions. The chemical processing industry has a lot of inertia to make products and materials in traditional ways that do not use electric fields, with some important exceptions such as in the production of alumina and the use of arc furnaces. New processes are being developed in the research community involving nano- and micro-materials and the manipulation of matter at small scales. This presentation will introduce several such applications and discuss electrospinning in more detail.