

Special Issue for "Waste Management and Plasma Technology"

Guest Editor: Malek Hassanpour, Researcher, Department of Environmental science, UCS, Osmania University, Telangana State, India. Email address: Malek.hassanpour@yahoo.com

Title

Progress and development of waste conversion to value-added materials, valuable gasses, energy applications, H₂ generation by Plasmatron, diamond depositions plasma reactors and related materials and their exploitation

Aim & Scope

Wastes emerged to be an opportunity to generate valuable materials and products for human demands. Particularly in non-developed countries, recycling of resources has become a prominent revenue source for society. Present thematic issue focuses on recent advances and developments on plasma technology applications in order to manage the wastes, for converting and depositing some new products employing chemical vapor deposition, make up the value-added materials, valuable gasses, H₂ generation by Plasmatron, and diamond and diamond-like materials deposition using plasma reactors and wastes as a feedstock. Plasmas forces are being generated via motivating the energy content of matters employing, thermal, chemical, rays, electrical, nucleus energy, the combination of them depend on the type of application as cold or hot plasmas in this issue. Plasma forces are the most prominent techniques to remove and retrieve waste materials in any states. The conversion of miscellaneous organic components to macromolecular thin layers up to make up highly and less cross-linked polymers, more highly functionalized films and modified surfaces and alterations in the state of matter have been realized using plasma forces by current issue. In many reports plasma forces assigned for gasification of different wastes such as rubbish derived fuel (paper, biomass and plastic), glycerol as a byproduct of biodiesel steam, biomass, plastics, paper, Aluminum foil, cloth, rubber, wood, tree branches, metals, concrete, bricks, tiles and ceramic, glass, cellulose, bitumen, coal, pet-coke, existing hydrocarbons in gases of hazardous wastes and raw waste vegetables mixed with raw wood; using plasma reactors such as microwave, gliding arc, Plasmatron, Radio Frequency, plasma torch and other thermal plasmas. The output gases utilized for lots of applications as syngas. Employing plasma pyrolysis, gasifiers and plasma treatment operations the most likely components that made up from carbonaceous matters are useful gaseous products as the precursors. Variety of plasma CVD reactors exploited to deposit diamond via introducing different precursors derived from waste materials resulted to form the mono and nano-crystalline diamond films, high-quality diamond, high-quality epitaxial crystals, carbon clusters, nano/micro overlayer framework, diamond-like carbon, epitaxial diamond nucleation, ultrafine diamonds, and hexagonal diamond films by plasma reactors. Plasma technology posed to be a powerful technology to handle greenhouse gases emissions and paving the way for green chemistry and value-added products are expected to be published in this proposed thematic issue.

Keyword

Plasma technology, Waste management, Chemical vapor deposition

Subtopics

Potential topics include, but are not limited to:

1. Plasmatron gasification of the waste stream.
2. Plasmatron H₂ generation by the waste stream.
3. Waste conversion by plasma reactors.
4. Novel applications of chemical vapor deposition using waste materials.
5. Novel applications of chemical vapor deposition using hazardous waste materials.
6. Research articles on development, optimization, and evaluation of plasma reactors for valuable materials deposition.

Schedule

Manuscript Submission deadline: July 31, 2020

Peer Review Due: From submission date to September 15, 2020 (One month to reviewers for submitting their comments/suggestions on the submitted manuscript)

Revision Due: October 15, 2020

Notification of acceptance by the Guest Editor: November 1, 2020

Final manuscripts due: December 15, 2020

List of contributing authors

Will give you later.

Other contributors will also be identified and invited for their review/research papers. Optionally, contributor willing to submit the article in this thematic issue may submit an abstract of the article to the guest editor.