materials

Invitation to submit

Magnetic Nanoparticles as High - frequency Nano - heaters

Guest Editor

Prof. Dr. Patricia de la Presa

Deadline

31 March 2019

Special Issue

Materials — Open Access Journal of Materials Science

Materials (ISSN 1996-1944; CODEN: MATEG9) is an open access journal of materials science and engineering published monthly online by MD

Impact Factor
Current Impact Factor: 2.654

5-year Impact Factor: 3.236
JCR category rank: 82/275 (Q2) in 'Materials Science, Multidisciplinary'

Special Issue *"Magnetic Nanoparticles as High-frequency Nano-heaters"*

A special issue of Materials (ISSN 1996-1944).

Deadline for manuscript submissions: 31 March 2019

Special Issue Editor

Guest Editor
Prof. Dr. Patricia de la Presa
Instituto de Magnetismo Aplicado, UCM-ADIF-CSIC, Madrid, Spain
Website (https://biography.omicsonline.org/spain/complutense-university-of-madrid/patricia-de-la-presa-muoz-de-toro-525994) | E-Mail ()

Special Issue Information

Dear Colleagues,

Before the end of the 20th century, the research on hyperthermia cancer treatment, by means of inductive heating of magnetic materials lasted several decades until, in 1993, the group of Jordan (A. Jordan, P. Wust, H. Fahling, W. John, A. Hinz and R. Felix, Int. J. Hyperthermia, 1993, 9, 51-68) reported on the high heating efficiency of magnetic colloids activated by an alternating magnetic field. Thereafter, investigation on magnetic nanoparticles as high-frequency nano-heaters has grown exponentially.

This new technique quickly became multidisciplinary; it awaked the interest of physicists, chemists, biologist, engineers, doctors, etc., since its efficacy depends on synthesis of magnetic materials, functionalization, optimization of physical and chemical properties, in-vivo and in-vitro experiments, in order to elucidate its potential application as a localized treatment of cancer.

In the last few years, new applications of these high-frequency nano-heaters have been also reported in the literature; for example, in the field of catalysis, molecular imprinting, shape memory effects in thermoplastic polymers, organic synthesis, etc. This opens a new and wide range of possibilities in the area of the heating efficiency of nanoparticles. First of all, biocompatibility is no longer a requirement; thus, there are no restrictions on material types. Second, the dispersion media can be organic or inorganic; providing different magnetic properties to the nanoparticles compared to the aqueous colloids. Finally, unlike hyperthermia cancer treatments, there are no restrictions on field frequency or amplitude.

I kindly invite you to submit your last results to this Special Issue on "Magnetic Nanoparticles as High-Frequency Nano-Heaters", covering magnetic nanoparticles and the optimization of heating efficiencies for different applications. The issue includes the design of magnetic nanoparticles, functionalization, physicochemical properties, system modelling, and their applications to biology and medicine; however, I encourage you also to submit works exploring their potential applications to other non-biological systems.

Prof. Dr. Patricia de la Presa
Guest Editor

Manuscript Submission Information

Manuscripts should be submitted online at www.mdpi.com (http://www.mdpi.com/) by registering (http://www.mdpi.com/user/register/) and logging in to this website (http://www.mdpi.com/user/login/). Once you are registered, click here to go to the submission form (http://www.mdpi.com/user/manuscripts/upload/?journal=materials). Manuscripts can be submitted until the deadline. All papers will be peer-reviewed. Accepted papers will be published continuously in the journal (as soon as accepted) and will be listed together on the special issue website. Research articles, review articles as well as short communications are invited. For planned papers, a title and short abstract (about 100 words) can be sent to the Editorial Office for announcement on this website.

Submitted manuscripts should not have been published previously, nor be under consideration for publication elsewhere (except conference proceedings papers). All manuscripts are thoroughly refereed through a single-blind peer-review process. A guide for authors and other relevant information for submission of manuscripts is available on the Instructions for Authors (http://www.mdpi.com/journal/materials/instructions) page. *Materials* (http://www.mdpi.com/journal/materials/) is an international peer-reviewed open access monthly journal published by MDPI.

Please visit the Instructions for Authors (http://www.mdpi.com/journal/materials/instructions) page before submitting a manuscript. The Article Processing Charge (APC) (http://www.mdpi.com/about/apc/) for publication in this open access (http://www.mdpi.com/about/openaccess/) journal is 1600 CHF (Swiss Francs). Submitted papers should be well formatted and use good English. Authors may use MDPI's English editing service (http://www.mdpi.com/authors/english) prior to publication or during author revisions.

Keywords

- Magnetic Nanoparticle
- Hyperthermia
- High Frequency Fields
- Heating Efficiency
- Specific Absorption Rate
- Specific Loss Power
- Hysteresis Losses
- Calorimetry

Published Papers

This special issue is now open for submission.

Submit to Special Issue (http://susy.mdpi.com/user/manuscripts/upload?form[journal_id]=14&form[special_issue_id]=15989)

Review for *Materials* (https://susy.mdpi.com/volunteer/journals/review)

Edit a Special Issue (/journalproposal/sendproposalspecialissue/materials)