Instruction for Authors

Scope of the Journal: The Iranian Journal of Basic Medical Sciences (IJBMS) is a peer-reviewed, quarterly publication by Mashhad University of Medical Sciences (UMS), Mashhad, Iran. The Journal of "IJBMS" is a modern forum for scientific communication. The purposes of the Journal are to encourage interdisciplinary discussions and to contribute to the advancement of medical sciences. Data and information, useful to investigators in any discipline in basic medical sciences mainly including Anatomical Sciences, Biochemistry, Genetics, Immunology, Microbiology, Pathology, Pharmacology, Pharmaceutical Sciences, and Physiology, will be published after they have been peer reviewed. This will also include reviews and multidisciplinary research.

A. General Policy: Manuscripts, or the essence of their content, must be previously unpublished and should not be under simultaneous consideration by another Journal. The authors should also declare if any similar work has been submitted to or published by another Journal. By virtue of the submitted manuscript, the corresponding author acknowledges that all the co-authors have seen and approved the final version of the manuscript. The corresponding author should provide all co-authors with information regarding the manuscript, and obtain their approval before submitting any revisions. Manuscripts are only accepted for publication on the understanding that the authors will permit editorial amendments, though proofs will always be submitted to the corresponding author before being sent finally to press. Prior to the initial submission of a new manuscript, please carefully consider that all authors’ names are included as no change to authors’ details will be permitted after the initial submission. The decision to accept a contribution rests with the Editorial Board of the IJBMS.

Manuscripts will be considered for publication in the form of original articles, short communications and review articles. The work should be original or a thorough by an authoritative person in a pertinent field.

B. Manuscript Preparation: Manuscripts should be prepared in accordance with the “Uniform Requirements for Manuscripts Submission to Biomedical Journals” proclaimed by the International Committee of Medical Journal Editors (http://www.icmje.org).
1. Manuscripts submitted in English, must be type written, double-spaced, on good quality A4 paper, or paper of similar format. Authors are requested to reserve margins of at least 2.5 cm all around the paper. Original drawings of photos, tables and figures should be furnished together with the manuscripts.
2. Manuscripts should be kept to a minimum length and should be subdivided into labeled sections (Title page, Abstract, Keywords, Introduction, Materials and Methods, Results, Discussion, Conclusion, Acknowledgment, and References).
3. A title page is to be provided and should include the title of the article, authors’ names with full first name (with degrees), authors’ affiliation, suggested running title and corresponding author. The affiliation should comprise the department, institution (usually university or company), city and state (or nation). The suggested running title should be less than 50 characters (including spaces) and should comprise the article title or an abbreviated version.

Iran J Basic Med Sci, Vol. 12, No. 2, Summer 2009 (Supplment 1)
thereof. For office purposes, the title page should include the name and complete mailing address, telephone and fax number, and email of the one author designated to review proofs.

4. An abstract no longer than 250 words for reviews and research articles is to be provided as the second page. Abstract should be structured as objective(s) (including purpose setting), materials and methods, results, and conclusion.

5. A list of 3-8 keywords, chosen from the Medical Subject Headings (MeSH) list, is to be provided directly below the abstract. Keywords should express the precise content of the manuscript, as they are used for indexing purposes. Provide abbreviations and nomenclature list in an alphabetical order and non-standard abbreviations contained in the manuscript (excluding references) with definitions after the keywords. Use abbreviations sparingly and only when necessary to save space, and to avoid repeating long chemical names or therapeutic regimes. In a figure or table, define the abbreviations used in a footnote.

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BS Fazlz Bazzaz, MSc, PhD
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THE SPECIALIZED CONGRESS AND INTERNATIONAL EXHIBITION OF NANOMEDICINE, NANOBIOТЕCHNOLOGY, NANOBIOSENSORS AND NANOMATERIALS
July 14-16, 2009
Pardisan Hotel, Mashhad, Iran

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Synthesis of Cobalt oxide and Cu doped Cobalt Oxide for Biosensor

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Abstract

Objective(s)
Metal and metal oxide nanoparticles have, recently, been widely used in the field of electrochemistry where they have found applications in electroanalysis, electrocatalysis and biocatalysis, especially in sensors and biosensors fabrications. In addition, magnetic nanoparticles have also attracted the attention of researchers because they can be widely used in the collection or separation of the bioactive matters, targeted drug delivery, and diagnosis or therapy of the diseases. Because of the enhancement of their magnetic properties these magnetic nanoparticles will play more important roles in the biosensor field in coming days. Cobalt oxide is one of the magnetic nanoparticles. It also has been used as an effective, inexpensive and tolerant catalyst for oxidation reactions in gas sensors for human health and environmental monitoring.

Materials and Methods
In our work, Cobalt oxide and Cu doped Cobalt oxide nano powders with different Cu/Co = 0, 0.05, 0.08, 0.10, 0.125 and 0.15 mole ratio are prepared using sol – gel technique. The initial sol was prepared by cobalt chloride (CoCl₂.6H₂O), water and absolute ethanol and copper chloride (CuCl₂·2H₂O) was used as the source of dopant. Citric acid was used as complex agent and ethylene glycol as polymer agent. The gel was annealed at 550°C for gaining the final nanopowder.

Results and Conclusion
XRD patterns showed formation of Co₃O₄, CuO and Cu₂O in cubic structure and the average grain sizes, calculated by scherrer formula, were about 45 to 60 nm depending on the Cu content.

Keywords: Nano powder, Nanoparticle, Biosensor, Sol – gel

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