Accepted Manuscript

Title: Biogenic porous silica and silicon sourced from Mexican Giant Horsetail (*Equisetum myriochaetum*) and their application as supports for enzyme immobilization

Authors: Anna Sola-Rabada, Padma Sahare, Graham J. Hickman, Marco Vasquez, J.A. del Rio, Leigh T. Canham, Carole C. Perry, Vivechana Agarwal

PII: S0927-7765(18)30122-X

DOI: https://doi.org/10.1016/j.colsurfb.2018.02.047

Reference: COLSUB 9187

To appear in: Colloids and Surfaces B: Biointerfaces

Received date: 4-12-2017 Revised date: 15-1-2018 Accepted date: 21-2-2018

Please cite this article as: Anna Sola-Rabada, Padma Sahare, Graham J.Hickman, Marco Vasquez, J.A.del Rio, Leigh T.Canham, Carole C.Perry, Vivechana Agarwal, Biogenic porous silica and silicon sourced from Mexican Giant Horsetail (Equisetum myriochaetum) and their application as supports for enzyme immobilization, Colloids and Surfaces B: Biointerfaces https://doi.org/10.1016/j.colsurfb.2018.02.047

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



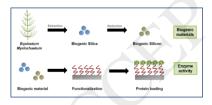
ACCEPTED MANUSCRIPT

Biogenic porous silica and silicon sourced from Mexican Giant Horsetail (*Equisetum myriochaetum*) and their application as supports for enzyme immobilization

Anna Sola-Rabada,^{1Ψ} Padma Sahare,^{2Ψ} Graham J. Hickman,¹ Marco Vasquez,² J. A. del Rio ³, Leigh T. Canham⁴, Carole C. Perry^{1*} and Vivechana Agarwal^{2*}

- ¹Biomolecular and Materials Interface Research Group, Interdisciplinary Biomedical Research Centre, School of Science and Technology, Nottingham Trent University, Clifton Lane, Nottingham, NG11 8NS, United Kingdom.
- ²Centro de Investigación en Ingeniería y Ciencias Aplicadas, Universidad Autónoma del Estado de Morelos, Av. Universidad 1001, Col. Chamilpa, Cuernavaca, Morelos, 62209, México.
- ³ Întituto de Energia Renovables-Universidad Nacional Autonoma de Mexico, Temixco, Morelos Mexico
- ⁴ Nanoscale Physics Research Laboratories, University of Birmingham, Edgbaston, Birmingham B15 2TT, United Kingdom.
- ^ΨAuthors contributed equally to work
- *Corresponding authors:
 - carole.perry@ntu.ac.uk, +44 115 84 86695, Biomolecular and Materials Interface Research Group, Interdisciplinary Biomedical Research Centre, School of Science and Technology, Nottingham Trent University, Clifton Lane, Nottingham, NG11 8NS, United Kingdom
 - vagarwal@uaem.mx, +52 777 3297084, Centro de Investigación en Ingeniería y Ciencias Aplicadas, Universidad Autónoma del Estado de Morelos, Av. Universidad 1001, Col. Chamilpa, Cuernavaca, Morelos, 62209, México.

Graphical abstract



Highlights:

- Biosilica from Equisetum Myriochaetum converted to nanoporous silicon
- Biogenic silica and derived silicon usable as supports for enzyme immobilization
- Range of enzyme immobilization techniques for silica/ silicon compared
- H. peroxidase effectively loaded on biogenic silica using glutaraldehyde coupling

Download English Version:

https://daneshyari.com/en/article/6980475

Download Persian Version:

https://daneshyari.com/article/6980475

Daneshyari.com