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Authors: Yolanda Moldes-Diz, Gemma Eibes, Carlos Vázquez-Vázquez, Alfonso Fondado, Jorge Mira, Gumersindo Feijoo, Juan M. Lema, Maria Teresa Moreira

PII: S2213-3437(18)30545-1
DOI: https://doi.org/10.1016/j.jece.2018.09.014
Reference: JECE 2635

To appear in:

Received date: 12-6-2018
Revised date: 10-8-2018
Accepted date: 9-9-2018

Please cite this article as: Moldes-Diz Y, Eibes G, Vázquez-Vázquez C, Fondado A, Mira J, Feijoo G, Lema JM, Moreira MT, A novel enzyme catalysis reactor based on superparamagnetic nanoparticles for biotechnological applications, *Journal of Environmental Chemical Engineering* (2018), https://doi.org/10.1016/j.jece.2018.09.014

A novel enzyme catalysis reactor based on superparamagnetic nanoparticles for biotechnological applications

Yolanda Moldes-Diz[1*], Gemma Eibes[1], Carlos Vázquez-Vázquez[2], Alfonso Fondado[3], Jorge Mira[3], Gumersindo Feijoo[1], Juan M. Lema[1], Maria Teresa Moreira[1]

[1]Dept. of Chemical Engineering, Institute of Technology, Universidade de Santiago de Compostela, 15782 Santiago de Compostela, Spain

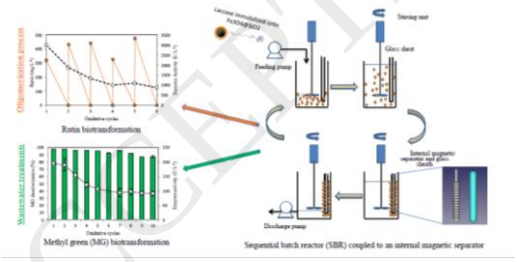
[2]Dept. of Physical Chemistry, Faculty of Chemistry, Universidade de Santiago de Compostela, 15782 Santiago de Compostela, Spain

[3]Dept. of Applied Physics, Faculty of Physics, Universidade de Santiago de Compostela, 15782 Santiago de Compostela, Spain

*Corresponding author: Tel.: +34881816771 +; fax: +34881816702

E-mail address: yolanda.moldes@usc.es

Graphical abstract



Highlights

- A magnetic separation unit of toroidal magnets in alternate polarity was designed.
- Laccase immobilized on magnetic nanoparticles was successfully recovered.
- Methyl green and rutin were successfully transformed in the magnetic enzymatic reactor.
- The scalability and economic feasibility of the process were investigated.