SEMANA DA INVESTIGAÇÃO

RESEARCH WEEK

ARTES DESIGN E ANIMAÇÃO

CIÊNCIAS ECONÓMICAS E DAS ORGANIZAÇÕES

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CIÊNCIA NUM CONTEXTO REGIONAL: UM EXEMPLO DE INVESTIGAÇÃO APLICADA NO IPPORTALEGRE

ABRIL 2016

GONÇALO LOURINHO

INTRODUÇÃO (1/1)

- Contraponto entre Investigação Fundamental (mais ligada às universidades) e Investigação Aplicada (mais aplicada aos politécnicos).
- Aplicar conhecimento aos problemas reais colocados pela sociedade.
- Inovação científica e tecnológica com alto impacto no desenvolvimento regional.
- Exemplo de Investigação Aplicada num contexto regional e suas ligações com a indústria e a comunidade em geral numa perspectiva pessoal.

BIOMASSA (1/1)

Contents lists available at ScienceDirect

Energy

journal homepage: www.elsevier.com/locate/energy

Assessment of biomass energy potential in a region of Portugal (Alto Alentejo)

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Waste Biomass Valor
DOI 10.1007/s12649-017-9830-3

ORIGINAL PAPER

Assessment of the Use of Forest Biomass Residues for Bioenergy in Alto Alentejo, Portugal: Logistics, Economic and Financial Perspectives

Adriano Guilhermino[1] · Gonçalo Lourinho[1] · Paulo Brito[1] · Nicolau Almeida[1]

- Trabalho multidisciplinar que levou ao mapeamento e avaliação do potencial em biomassa do Alto Alentejo (ton/ano ou MJ/ano), com um forte carácter regional e em parceria com players municipais.

BIODIESEL (1/1)

Rev Environ Sci Biotechnol
DOI 10.1007/s11157-014-9359-x

REVIEWS

Advanced biodiesel production technologies: novel developments

Gonçalo Lourinho · Paulo Brito

Abstract Biodiesel, i.e. a mixture of monoalkyl esters of long chain fatty acids derived from renewable biological sources such as vegetable oils has in recent years emerged as an alternative fuel for transportation sector. The conventional method of producing biodiesel is through homogeneous catalytic transesterification; however, increased production costs associated with downstream purification steps have led to the development of more cost-effective and environmental friendly technologies. These advanced production establishment of these technologies, calling for the development of novel methods to intensify the process. These process intensification technologies include ultrasound irradiation, microwave heating, use of co-solvents, and membrane reactors. The main focus of this review is to discuss recent advances as regards to biodiesel production technologies, devoting a special attention to the use of novel catalysts, diversified feedstocks, besides an analysis of main operational parameters of transesterification processes.

- Revisão de novas tecnologias de produção de biodiesel como forma de estabelecer novas linhas de investigação na área.

BIOGÁS E HIDROGÉNIO (1/1)

REVIEW ARTICLE

Hydrogen Production *via* Water Electrolysis: Patent Search and Analysis

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ARTICLE HISTORY

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10.2174/1872212110666160728101353

Abstract: ***Background:*** A significant effort has been underway to put renewable energy sources at the heart of the current energy model. Hydrogen produced *via* water electrolysis has been identified as one of the most promising means to help achieve this goal, especially by enabling energy storage in a sustainable and non-polluting way. In recent years, this situation has triggered novel developments in water electrolysis technologies and patenting of new inventions.

Objective: The aim of this work is to review the state-of-the-art in hydrogen production from water electrolysis using a patent search and analysis. The paper also reviews, in brief, some relevant patents on water electrolysis technologies.

Method: The patent search was carried out on the European Espacenet database. The research method was based on the use of keywords and subsequent content analysis. Patent data was discussed and analyzed in terms of production technology, year of publication, geographical area of the holder and applicant type.

Results: A total of 103 patent documents were identified, most of them (75%) reporting developments on conventional water electrolysis technologies. Patents on emergent technologies were mostly granted after 2005. Global research effort was mainly supported by academia both in Europe and the US. Industry played an important role in Japan.

Conclusion: Patent data suggests that water electrolysis technologies are either in their early stages of growth (High Steam Temperature Electrolysis, High Pressure Electrolysis) or in a phase of growth/maturity (Alkaline Electrolysis, Solid Polymer Electrolysis) with novel developments still needed and more patents foreseen in the future.

- Valorização de efluentes agroindústrias com alto carácter poluente para produção de energia, respondendo ao desafio colocado por uma empresa de pecuária do Alentejo.

CONCLUSÃO (1/1)

- A Investigação Fundamental de hoje é a Investigação Aplicada de amanhã.
- Maior criação de valor da Investigação Aplicada levando em conta o contexto regional.
- Áreas de especialização. Sinergias e ligações com a indústria e o tecido empresarial local.
- A Investigação Aplicada é essencial a nível regional e os politécnicos devem estar na linha da frente no que respeita à sua promoção.

OBRIGADO!