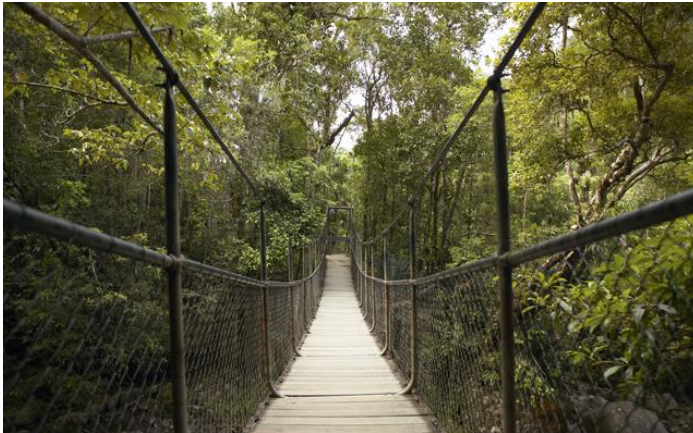


IPENZ ENGINEERING UPDATE May 2011



This Engineering Update is published by the Energy Library on behalf of IPENZ. It highlights recent items of interest in engineering and management.

If you wish to be placed on the mailing list to receive a copy directly, please contact Energy Library library@energylibrary.org.nz and type "Subscribe IPENZ Update" in the subject line.

Energy Library members can request items by quoting the code number. Those who are not members of Energy Library can obtain copies from their organisational or public library.

Energy Library member requests should be emailed to library@energylibrary.org.nz.

Samplings from this Issue

- **Doing well by doing good: The grand illusion.**
- **You're a facilitator? What do you do?**
- **Effective training: A case study from the oil & gas industry.**
- **The story of world record bridge spans.**
- **Shear deformations of slender reinforced concrete walls under seismic loading.**
- **Long-term reinforcement load of geosynthetic-reinforced soil retaining walls.**
- **Towards new types of water-centric collaboration.**
- **Lightweight recycled geomaterials reinforced with geogrids.**
- **Geographic information system assessment of tsunami vulnerability on a dune coast.**
- **Predicting peak outflow from breached embankment dams.**

➤ **Special Focus : Algae and Biofuels**

Management/Leadership/Strategic Planning/Recruitment/Training and Development/Project Management/Corporate Responsibility

√IPENZ 46/01 "Doing well by doing good": The grand illusion.

Karnani, A. California Management Review, Volume 53, Issue 2 (Winter 2011) Pages 69-86.

Executives, business academics and public officials have been captured by the idea that companies can "do well by doing good". This derives from the claim that achieving some larger social goals is the corporate social responsibility of firms and this can happen with no financial sacrifice. The authors contend that this appealing proposition is fundamentally misleading. When markets are working well, an appeal to firms to fulfil social responsibility is unnecessary. When markets fail, then a tradeoff is required between private profits and public interest. In such cases, constraints need to be imposed in terms of corporate social responsibility, industry self-regulation, civil society activism and government regulation.

√IPENZ 46/02 Effective training: A case study from the oil & gas industry.

Cullen, E. T. Professional Safety, Volume 56, Issue 3 (March 2011) Pages 40-47.

The article presents a case study which discusses the development of new training videos for the oil and petroleum extraction industry's high-risk, blue-collar workers. It explores the Oil and Gas Injury Reduction project of the National Institute for Occupational Safety and Health (NIOSH), which is centered on the development of culturally relevant and acceptable materials for workers. It examines the steps for undertaking work culture study or occupational ethnography.

√IPENZ 46/03 You're a facilitator? What do you do?

Mann, T. Training Journal (January 2011) Pages 24-29.

The article reveals the characteristics of a good facilitator. It stresses the difference that a good facilitation can make between a poor decision and a brilliant one. It notes the significance of the facilitator's expertise in listening to the conversation or discussion and to know which process tools and techniques to apply in a company. It highlights the experiential background as a key in determining the style of the practitioner.

√IPENZ 46/04 Facilitating remotely.

Mann, T. Training Journal (February 2011) Pages 29-32.

The article discusses the application of technological advancements in facilitating collaborations in various organizations and companies in Great Britain. It compares the roles of facilitators and other human resource (HR) managers and examines the impact of the internet on group collaboration.



√IPENZ 46/05 Failing by design.

McGrath, R. G. Harvard Business Review, Volume 89, Issue 4 (April 2011) Pages 76-83.

It's hardly news that business leaders work in increasingly uncertain environments, where failures are bound to be more common than successes. Yet if you ask executives how well, on a scale of one to 10, their organizations learn from failure, you'll often get a sheepish "Two—or maybe three" in response. Such organizations are missing a big opportunity: Failure may be inevitable but, if managed well, can be very useful. A certain amount of failure can help you keep your options open, find out what doesn't work, create the conditions to attract resources and attention, make room for new leaders, and develop intuition and skill. The key to reaping these benefits is to foster "intelligent failure" throughout your organization. McGrath describes several principles that can help you put intelligent failure to work. You should decide what success and failure would look like before you start a project. Document your initial assumptions, test and revise them as you go, and convert them into knowledge. Fail fast—the longer something takes, the less you'll learn—and fail cheaply, to contain your downside risk. Limit the number of uncertainties in new projects, and build a culture that tolerates, and sometimes even celebrates, failure. Finally, codify and share what you learn. These principles won't give you a means of avoiding all failures down the road—that's simply not realistic. They will help you use small losses to attain bigger wins over time.

√IPENZ 46/06 Globalization: Conundrums and paradoxes for civil engineering.

Sheehan, M. Leadership & Management in Engineering, Volume 10, Issue 1 (January 2010) Pages 10-15.

√IPENZ 46/07 Help on the way: Senior leaders can benefit from working with a mentor.

Zachary, L. J. and Fischler, L. A. Leadership in Action, Volume 29, Issue 2 (May/June 2009) Pages 7-11.

√IPENZ 46/08 Inside Ericsson: A framework for the practice of leading global IT-enabled change.

Iveroth, E. California Management Review, Volume 53, Issue 1 (Fall 2010) Pages 136-153.

How is IT-enabled change successfully led by managers? This article reports on a three-year case study inside Ericsson where the company successfully transformed its finance and accounting department from a group of independent structures into one interdependent global network sharing service centres using a sole information system. Other studies are also referred to with guidelines offered to improve managerial practice.

√IPENZ 46/09 The key commandments for doing business in Russia.

Fey, C. F. and Shekshnia, S. Organizational Dynamics, Volume 40, Issue 1 (January-March 2011) Pages 57-66.

√IPENZ 46/10 Learning risk management from engineers.

Carrison, D. Industrial Engineer: IE, Volume 42, Issue 10 (October 2010) Pages 42-46.

This article posits that engineers often take huge calculated risks that would scare many entrepreneurs and presents examples from Turner Construction, which built a high-rise rather than an oval stadium, Boeing and NASA.

√**IPENZ 46/11 Operatives' experiences of cultural diversity on Australian construction sites.**

Loosemore, M. et al. Construction Management & Economics, Volume 28, Issue 2 (February 2010) Pages 177-188.

√**IPENZ 46/12 Overseas knowledge transfer.**

Martins, J. M. and António, N. D. S. Industrial Management, Volume 53, Issue 2 (March 2011) Pages 26-30.
Research on transferring knowledge overseas to subsidiaries in developing countries is presented. Success factors include cooperation between the multinational enterprise and the subsidiary as well as the absorptive capacity of the subsidiary. The compatibility of priorities of MNEs and subsidiaries is an important factor.



√**IPENZ 46/13 Practical application of SWOT analysis in the management of a construction project.**
Milosevic, I. N. Leadership & Management in Engineering, Volume 10, Issue 2 (April 2010) Pages 78-86.

√**IPENZ 46/14 The Process Analysis Method of selecting indicators to quantify the sustainability performance of a business operation.**

Chee Tahir, A. and Darton, R. C. Journal of Cleaner Production, Volume 18, Issue 16/17 (November 2010) Pages 1598-1607.

√**IPENZ 46/15 Recognizing and responding to workplace grief.**

Hazen, M. A. Organizational Dynamics, Volume 38, Issue 4 (October-December 2009) Pages 290-296

√**IPENZ 46/16 Two types of leaders-which are you? Advanced safety leadership skills: Part 1.**

Pater, R. Professional Safety, Volume 56, Issue 1 (January 2011) Pages 25-26.
Regular and advanced leadership differ in terms of efficiency and impact levels. This article discusses the skills and attributes of both types of leadership and highlights that the latter is better able to improve the safety, performance, culture and motivation of an organisation. The stages of advanced leadership are considered.

√**IPENZ 46/17 9 Critical mind-sets, skill sets & tool sets. Advanced safety leadership skills: Part 2.**

Pater, R. Professional Safety, Volume 56, Issue 2 (February 2011) Pages 26-28.
How advanced leadership can be harnessed to attain workplace safety is discussed in this article. Certain mind-sets, tool sets and skill sets are needed to make progress and nine generally applicable are offered.

√IPENZ 46/18 What does the organization need me to do?

Baldoni, J. Journal for Quality & Participation, Volume 33, Issue 1 (April 2010) Pages 10-14.
Strategies to assist individuals in becoming better leaders are considered in this article. The advice includes thinking about the organisation's needs, including threats and opportunities, and learning from mistakes.

√IPENZ 46/19 Worker fatigue.

Hallowell, M. R. Professional Safety, Volume 55, Issue 12 (December 2010) Pages 18-26.
The article summarizes the literature related to mental and localized muscular fatigue and offers a model for fatigue management on highway construction projects in the U.S. It focuses on the personal and project-related characteristics contributing to fatigue, methods of measuring fatigue, mitigation and the impacts of fatigue on safe work behavior and quality of life. Particular focus is given to physiological fatigue and localized muscular fatigue on rapid renewal highway projects.

√IPENZ 46/20 I'll sleep when I'm dead: Managing those too busy to sleep.

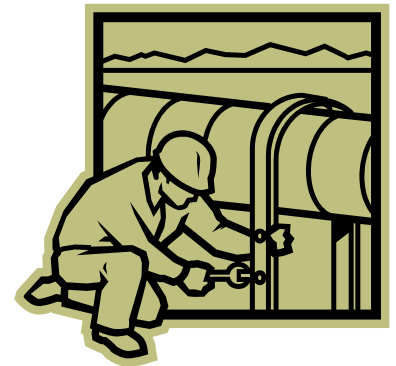
Barnes, C. M. Organizational Dynamics, Volume 40, Issue 1 (January-March 2011) Pages 18-26.

√IPENZ 46/21 A tribute to Philip Barnett Bucky (1899-1957): Father of centrifuge modeling in geomechanics.

Ling, H. I. Acta Geotechnica, Volume 5, Issue 1 (April 2010) Pages 83-85.
The late Prof. Philip B. Bucky is recognized as a pioneer in centrifuge modelling.

TECHNICAL ASPECTS OF ENGINEERING.

Abstracts for most are available on request.

**√IPENZ 46/22 Shear deformations of slender reinforced concrete walls under seismic loading.**

Beyer, K., Dazio, A. and Priestley, M. J. N. ACI Structural Journal, Volume 108, Issue 2 (March/April 2011) Pages 167-177.

√IPENZ 46/23 Behavior of anchors in concrete at seismic-relevant loading rates.

Hoehler, M. S., Mahrenholtz, P. and Elgehausen, R. ACI Structural Journal, Volume 108, Issue 2 (March/April 2011) Pages 238-247.

√IPENZ 46/24 Construction of deep tunnel shafts in Mexico City soft clays by the flotation method.

Auvinet-Guichard, G., Rodríguez-Rebolledo, J. F. and Rangel-Núñez, J. L. Acta Geotechnica, Volume 5, Issue 1 (April 2010) Pages 63-68.

√IPENZ 46/25 **Analysis of cut-and-cover tunnels against large tectonic deformation.**

Anastasopoulos, I. and Gazetas, G. Bulletin of Earthquake Engineering, Volume 8, Issue 2 (April 2010) Page 283.

√IPENZ 46/26 **Soil failure can be used for seismic protection of structures.**

Anastasopoulos, I. et al. Bulletin of Earthquake Engineering, Volume 8, Issue 2 (April 2010) Pages 309-326.

√IPENZ 46/27 **The story of world record spans.**

Tang, M-C. Civil Engineering, Volume 80, Issue 3 (March 2010) Pages 56-63.

The article offers information on the history of the longest bridges in the world. The author highlighted the world record suspension bridges spans, in which, the present longest bridge span is the Akashi-Kaikyo Bridge in Japan and the first recorded longest bridge span was the Luding bridge in China in the 1700s. The author also presented the world record cable-stayed bridge spans and the world record arch bridge spans

√IPENZ 46/28 **High Level Bridge: Engineering successful heritage solutions.**

Abbott, T. and Ayling, L. Proceedings of the Institution of Civil Engineers: Engineering History and Heritage, Volume 162, Issue EH3 (August 2009) Pages 127-136



√IPENZ 46/29 **A new approach to aerostatic analysis of long-span bridges.**

Ma, H., Su, C. and Huang, Z. Proceedings of the Institution of Civil Engineering: Structures and Buildings. Volume 162, Issue SB2. (April 2009) Pages 129-135

√IPENZ 46/30 **A timber cantilevered view walkway in Vitoria, Spain.**

Fernández-Cabo, J. L. Proceedings of the Institution of Civil Engineers: Construction Materials, Volume 162, Issue CM4 (November 2009) Pages 167-174.

√IPENZ 46/31 **Investigation of dynamic behavior of geosynthetic reinforced soil retaining structures under earthquake loads.**

Guler, E. and Enunlu, A. K. Bulletin of Earthquake Engineering, Volume 7, Issue 3 (August 2009) Pages 737-777.

√IPENZ 46/32 **Long-term reinforcement load of geosynthetic-reinforced soil retaining walls.**

Huabei Liu; Myoung-Soo Won. Journal of Geotechnical & Geoenvironmental Engineering, Volume 135 Issue 7 (July 2009) Pages 875-889.

√**IPENZ 46/33 On global equilibrium in design of geosynthetic reinforced walls.**

Leshchinsky, D. Journal of Geotechnical & Geoenvironmental Engineering, Volume 135 Issue 3 (March 2009) Pages 309-315.

√**IPENZ 46/34 Lightweight recycled geomaterials reinforced with geogrids.**

Voottipruex, P., Bergado, D. T. and Tanchaisawat, T. Proceedings of the Institution of Civil Engineers: Ground Improvement, Volume 163, Issue GI1 (February 2010) Pages 13-21.

√**IPENZ 46/35 Using reinforced soil systems in hammer foundations.**

Heidari, M. and El Naggar, M. H. Proceedings of the Institution of Civil Engineers: Ground Improvement, Volume 163, Issue GI2 (May 2010) Pages 121-132.

√**IPENZ 46/36 Field studies on defluoridation using magnesium oxide.**

Rao, S. M. et al. Proceedings of the Institution of Civil Engineers: Water Management, Volume 163, Issue WM3 (March 2010) Pages 147-155.

√**IPENZ 46/37 Using recycled waste tyres in concrete paving blocks.**

Ling, T. C., Nor, H. M. and Lim, S. K. Proceedings of the Institution of Civil Engineers: Waste and Resource Management, Volume 163, Issue WR1 (February 2010) Pages 37-45.

√**IPENZ 46/38 Towards new types of water-centric collaboration.**

Quinn, P. F. et al. Proceedings of the Institution of Civil Engineers: Water Management, Volume 163, Issue WM1 (January 2010) Pages 39-51.

√**IPENZ 46/39 New technology saves a sewer interceptor– and \$1.5 million!**

Stocking, A. Underground Construction, Volume 66 Issue 1(January 2011) Pages 48-51,
The article discusses a concrete additive that permanently inhibits microbiology induced corrosion.

√**IPENZ 46/40 Testing concrete durability in sewer environment.**

Soroushian, P. et al. Proceedings of the Institution of Civil Engineers: Construction Materials, Volume 163, Issue CM1 (February 2010) Pages 35-44.

√**IPENZ 46/41 Infrastructure condition prediction models for sustainable sewer pipelines.**

Chughtai, Fazal; Zayed, Tarek. Journal of Performance of Constructed Facilities, Volume 22 Issue 5 (September/October 2008) Pages p333-341.

√IPENZ 46/42 **Geographic information system assessment of tsunami vulnerability on a dune coast.**

Hart, D. E. and Knight, G. A. Journal of Coastal Research, Volume 25, Issue 1 (January 2009) Pages 131-158.

Outlines a novel procedure for assessing the vulnerability of an open-coast dune system to tsunami hazard and applies to coast of Christchurch, New Zealand.

√IPENZ 46/43 **Urban storm-water quality management: centralized versus source control.**

Freni, Gabriele; Mannina, Giorgio; Viviani, Gaspare. Journal of Water Resources Planning & Management, Volume 136 Issue 2 (March/April 2010) Pages 268-278.

√IPENZ 46/44 **Impediments and solutions to sustainable, watershed-scale urban stormwater management: Lessons from Australia and the United States.**

Roy, A et al. Environmental Management, Volume 42 Issue 2 (August 2008) Pages 344-359.

√IPENZ 46/45 **Technology and communications in an urban crisis: The role of mobile communications systems in disasters.**

Smith, P. C. and Simpson, D. M. Journal of Urban Technology, Volume 16, Issue 1 (April 2009) Pages 133-149.

√IPENZ 46/46 **Predicting peak outflow from breached embankment dams.**

Pierce, M. W., Thornton, C. I. and Abt, S. R. Journal of Hydrologic Engineering, Volume 15, Issue 5 (May 2010) Pages 338-349.

√IPENZ 46/47 **Seasonal thermal displacements of gravity dams located in northern regions.**

Léger, P. and Seydou, S. Journal of Performance of Constructed Facilities, Volume 23, Issue 3 (May/June 2009) Pages 166-174.

√IPENZ 46/48 **A comparative appraisal of the use of rainwater harvesting in single and multi-family buildings of the Metropolitan Area of Barcelona (Spain): Social experience, drinking water savings and economic costs.**

Domenech, L. and Sauri, D. Journal of Cleaner Production, Volume 19, Issues 6/7 (April/May 2011) Pages 598-608.

√IPENZ 46/49 **Cost comparative study for new water distillation techniques by solar energy.**

Muslih, I. M., Abdallah, S. M. and Husain, W. A. Applied Solar Energy, Volume 46, Issue 1 (March 2010) Pages 8-12.

√IPENZ 46/50 **Quantifying the effects of climate change and risk level on peak load design in buildings.**

Watkins, R. and Levermore, G. J. Building Services Engineering Research & Technology: A special issue reporting recent progress on the resilience, Volume 32, Issue 1 (February 2011) Pages 9-19.

√IPENZ 46/51 **The effects of future climate change on heating and cooling demands in office buildings in the UK.**

Chow, D. H. C. and Levermore, G. J. Building Services Engineering Research & Technology, Volume 31, Issue 4 (November 2010) Pages 307-323.

√IPENZ 46/52 **Microgrids research: A review of experimental microgrids and test systems.**

Lidula, N. W. A. and Rajapakse, A. D. Renewable and Sustainable Energy Reviews, Volume 15, Issue 1 (January 2011) Pages 186-202.

√IPENZ 46/53 **Microgrids, virtual power plants and our distributed energy future.**

Asmus, P. The Electricity Journal, Volume 23, Issue 10 (December 2010) Pages 72-82.

√IPENZ 46/54 **Thermochemical conversion of biomass to second generation biofuels through integrated process design – A review.**

Damartzis, T. and Zabaniotou, A. Renewable and Sustainable Energy Reviews, Volume 15, Issue 1 (January 2011) Pages 366-378.

√IPENZ 46/55 **Attributional life cycle assessment of woodchips for bioethanol production.**

Neupane, B., Halog, A. and Dhungel, S. Journal of Cleaner Production, Volume 19, Issue 6/7 (April/May 2011) Pages 733-741.

√IPENZ 46/56 **Application of solar heat sources at thermal electric power plants.**

Zakhidov, R. A. and Anarbaev, A. I. Applied Solar Energy, Volume 46, Issue 1 (March 2010) Pages 66-70.

√IPENZ 46/57 **A way to increase the efficiency of convective heat exchange in the channels of solar water collectors.**

Abbasov, E. S., Umurzakova, M. A. and Nigmatov, U. Z. Applied Solar Energy, Volume 46, Issue 1 (March 2010) Pages 29-32.

√IPENZ 46/58 **Going hybrid: An analysis of consumer purchase motivations.**

Ozaki, R. and Sevastyanova, K. Energy Policy, Volume 39, Issue 5 (May 2011) Pages 2217-2227.

√IPENZ 46/59 **Long-term implications of alternative light-duty vehicle technologies for global greenhouse gas emissions and primary energy demands.**

Kyle, P. and Kim, S. H. Energy Policy, Volume 39, Issue 5 (May 2011) Pages 3012-3024.

SPECIAL FOCUS –Algae and biofuels.

√IPENZ 46/60 Algal biofuels: The process.

Knoshaug, E. P. and Darzins, A. Chemical Engineering Progress, Volume 107, Issue 3 (March 2011) Pages 37-41,47.

√IPENZ 46/61 Algal biofuels: The research.

Cheng, K. and Ogden, K. L. Chemical Engineering Progress, Volume 107, Issue 3 (March 2011) Pages 42-47.

√IPENZ 46/62 Algal biofuels: The backstory.

Gopalratnam, A. Chemical Engineering Progress, Volume 107, Issue 3 (March 2011) Pages 35-36.

√IPENZ 46/63 Stakeholder perceptions of biofuels from microalgae.

Oltra, C. Energy Policy, Volume 39, Issue 3 (March 2011) Pages 1774-1781.

In this paper we focus on stakeholder views around the development of advanced biofuels from microalgae. Research for the development of microalgal-derived biofuels was initiated by the US Department of Energy (DOE) more than 30 years ago. However, interest in this eco-innovation has been growing significantly over the last five years in various countries. The high productivity of algae indicates that algal biofuels could contribute to reduce our dependence on fossil fuels while avoiding the undesired impacts of first generation biofuels. There are still numerous challenges that need nevertheless to be addressed. The aim of this paper is to explore stakeholder perceptions of the current barriers and opportunities associated with this promising emergent technology.

√IPENZ 46/64 Microalgae as a sustainable energy source for biodiesel production: A review.

Ahmad, A. L. et al. Renewable and Sustainable Energy Reviews, Volume 15, Issue 1 (January 2011) Pages 584-593.

Of the three generations of biodiesel feedstocks described in this paper, food crops, non-food crops and microalgae-derived biodiesel, it was found that the third generation, microalgae, is the only source that can be sustainably developed in the future. Microalgae can be converted directly into energy, such as biodiesel, and therefore appear to be a promising source of renewable energy. This paper presents a comparison between the use of microalgae and palm oil as biodiesel feedstocks. It was found that microalgae are the more sustainable source of biodiesel in terms of food security and environmental impact compared to palm oil. The inefficiency and unsustainability of the use of food crops as a biodiesel source have increased interest in the development of microalgae species to be used as a renewable energy source. In this paper, the main advantages of using microalgae for biodiesel production are described in comparison with other available feedstocks, primarily palm oil.



√IPENZ 46/65 Commercialization potential of microalgae for biofuels production.

Jasvinder Singh, Sai Gu. Renewable and Sustainable Energy Reviews, Volume 14, Issue 9 (December 2010) Pages 2596-2610.

The available literature on various aspects of microalgae, e.g. its cultivation, life cycle assessment, and conceptualization of an algal biorefinery, has been scanned and a critical analysis has been presented. A critical evaluation of the available information suggests that the economic viability of the process in terms of minimizing the operational and maintenance cost along with maximization of oil-rich microalgae production is the key factor, for successful commercialization of microalgae-based fuels.

√IPENZ 46/66 Sustainability of algal biofuel production using integrated renewable energy park (IREP) and algal biorefinery approach.

Bobban G. Subhadra. Energy Policy, Volume 38, Issue 10 (October 2010) Pages 5892-5901.

Algal biomass can provide viable third generation feedstock for liquid transportation fuel. However, for a mature commercial industry to develop, sustainability as well as technological and economic issues pertinent to algal biofuel sector must be addressed first. This viewpoint focuses on three integrated approaches laid out to meet these challenges.

√IPENZ 46/67 An integrated renewable energy park approach for algal biofuel production in United States.

Bobban Subhadra, Mark Edwards. Energy Policy, Volume 38, Issue 9 (September 2010) Pages 4897-4902.

Algal biomass provides viable third generation feedstock for liquid transportation fuel that does not compete with food crops for cropland. However, fossil energy inputs and intensive water usage diminishes the positive aspects of algal energy production. An integrated renewable energy park (IREP) approach is proposed for aligning renewable energy industries in resource-specific regions in United States for synergistic electricity and liquid biofuel production from algal biomass with net zero carbon emissions. The benefits, challenges and policy needs of this approach are discussed.

**√IPENZ 46/68 Biofuels from microalgae – A review of technologies for production, processing, and extractions of biofuels and co-products.**

Brennan, L. and Owende, P. Renewable and Sustainable Energy Reviews, Volume 14, Issue 2 (February 2010) Pages 557-577.

√IPENZ 46/69 Microalgae for biodiesel production and other applications.

Teresa M. Mata, António A. Martins, Nidia. S. Caetano. Renewable and Sustainable Energy Reviews, Volume 14, Issue 1 (January 2010) Pages 217-232.

√IPENZ 46/70 Prospects of biodiesel production from microalgae in India.

Shakeel A. Khan, Rashmi, Mir Z. Hussain, S. Prasad, U.C. Banerjee
Renewable and Sustainable Energy Reviews, Volume 13, Issue 9, December 2009, Pages 2361-2372.

√IPENZ 46/71 **Extraction of bio-oils from microalgae.**

Cooney, M., Young, G. and Nagle, N. Separation & Purification Reviews, Volume 38, Issue 4 (October 2009) Pages 291-325.

√IPENZ 46/72 **Algae's powerful future.**

McIntyre, R. The Futurist, Volume 43, Issue 2 (March/April 2009) Pages 25-28,30-32.

√IPENZ 46/73 **Cultivating algae in wastewater for biofuel.**

Greer, D. BioCycle, Volume 50, Issue 2 (February 2009) Pages 36-39.

√IPENZ 46/74 **Microalgae as a raw material for biofuels production.**

Gouveia, L. and Oliveira, A. C. Journal of Industrial Microbiology & Biotechnology, Volume 36, Issue 2 (February 2009) Pages 269-274.

√IPENZ 46/75 **A contribution to global sustainable development: inclusion of microalgae and their biomass in production and bio cycles.**

Avagyan, A. Clean Technologies and Environmental Policy, Volume 10, Issue 4 (November 2008) Pages 313-317.

Energy Library also produces a monthly Energy Update and a quarterly Environment Update.
View all newsletters online <http://www.energylibrary.org.nz/news.asp>

Energy Library now offers a coaching service for international engineers who want to improve their English language skills. This service is outlined in the inaugural issue of **English for International Engineers** newsletter [here](#)