Economic Sustainability and Environmental Protection in Mediterranean Countries through Clean Manufacturing Methods

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Series C: Environmental Security

Economic Sustainability and Environmental Protection in Mediterranean Countries through Clean Manufacturing Methods

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Preface

Sustainable development has been a key issue in developed countries since 1970. It can be considered as an integration of three factors: environmental, economic and socio-political. Technological advances and new strategies implemented in many industrial activities have been successful in dealing with some major issues, leading to the so called *steady state economy*.

Sustainable development is also a major issue for developing countries, but its implementation is not always compatible with their goals of growth and better living standards. There has been in the last two decades an increasing demand for high quality water mainly because the intensive exploitation of aquifers, primarily in arid zones.

The NATO-Advanced Training Course “*Economic sustainability and environmental protection in Mediterranean Countries through clean manufacturing methods*” was intended to address sustainable strategies and the search of alternative sources and water treatment methods. The course was planned to be held in Sfax (Tunisia), but because of the political events it was postponed and held in Huelva (Spain) on October 3–7, 2012. A selection of presentations is included in this volume.

Membrane treatment of effluents received special attention as a technology to alleviate water shortage, by promoting recycling. Integrated or hybrid systems combining physico-chemical pretreatments followed by membrane treatment are very promising technologies in many arid areas of the world.

The course and this monograph would not have been possible without the generous participation of the speakers and participants interest through stimulating discussions. We acknowledge and thank all of them.

We would like to thank those who contributed with their efforts to the organization of the course (Prof. José Manuel Benito, María Matos, and Emilio Muñoz).

Finally, we acknowledge the support of the NATO Science for Peace and Security Section (NATO-SPS) for granting us the opportunity to host this course in Huelva, the University of Huelva for making available its facilities, and the companies

(CEPSA and J. García Carrion) for letting us to visit their manufacturing plants. And last but not least, we thank Prof. Juan Pedro Bolívar of the University of Huelva for his cooperation, patience and understanding.

José Coca-Prados
Gemma Gutiérrez-Cervelló

NATO ADVANCED TRAINING COURSE: “Economic Sustainability and Environmental Protection in Mediterranean Countries through Clean Manufacturing Methods”

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List of Contributed Lectures Presented During the ATC:

1. Achieving Sustainability with Clean Manufacturing Methods (S.K. Sikdar)
2. Innovative Technologies for Wastewater Treatment (J.M. Lema)
3. Treatment of Complex Systems – Advanced Oxidation Processes (T.W. Chapman)
4. Recovery and Recycling of Industrial Wastewater by Hybrid Processes (F. Shadman)
5. Activated Carbon Adsorption and Chemical Regeneration in Food Industries (R. Sierka)
6. Cleaner Production in Industry: Capacity Building and Implementation (J.K. Staniskis)
7. Treatment of Oily Wastewaters by Hybrid Membrane Process (J. Coca)
8. New Technologies in Leather Processing Industry (M. Renner)

9. Textil Wastewater Treatment and Recycling (R. Ben Amar)
10. Application of Cross-Flow MBR Technology for the Treatment of High Loaded Wastewater and Landfill Leachates (B. Fitzke)
11. Nutrient Removal and Phosphorous Recovery from Wastewaters (M. Alvarez-Cuenca)
12. Changes in Groundwater Salinity and Nitrate Concentrations Due to a Aquifer Recharge by Treated Wastewater: Korba Case Study (A. Foued)

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