

◆ A book has appeared [G. Centi, F. Trifirò, S. Perathoner, F. Cavani, Eds., *Sustainable Industrial Processes*, Wiley-VCH, Weinheim, 2009] containing an article ["*Ecofining new process for green Diesel production from vegetable oil*"] by F. Baldiraghi *et al.*, pp. 427–438, which describes the Ecofining Process, resulting from the collaboration between UOP-LLC and Eni SpA, a joint effort initiated in the year 2005. The resulting product can be easily blended with conventional refinery outcomes. The UOP/ENI Ecofining process utilizes vegetables and converts them to a high-quality Diesel fuel or to a Diesel blend stock, characterized by being free from aromatics and sulfur.

◆ A series of contributions have appeared resulting from the research carried out at Istituto Eni Donegani, Center for Nonconventional Energies, Novara, Italy, on: (a) the production of liquid fuels from biomass [C. Perego *et al.*, *Chem. Eng. J.*, 2010, **161**, 314], and, (b) a new proprietary Fischer-Tropsch-type process [C. Perego *et al.*, *Catalysis Today*, 2009, **142**, 9]. These contributions point out that catalytic precursors based on transition metals of the Groups from 3 to 6 do not efficiently catalyze the F-T reaction: this is due to their tendency to form stable oxides. On the other hand, high efficiency in the F-T reaction is observed with catalysts based on iron, cobalt, nickel, ruthenium, and osmium; a moderate efficiency in this process is also performed by catalysts containing rhenium or rhodium. A patent [C. Perego *et al.*, "Process for producing hydrocarbon fractions from mixtures of biological origin", WO 2008/058664 A1, Applicants: Eni SpA, Roma, and UOP LCC, Des Plaines, IL, USA; International Filing Data: November 7th, 2007] has appeared. These contributions are mainly concerned with the Gas-to-Liquid (GtL) process by which natural gas is converted to transportable liquids.

◆ A review-article from the Università di Ferrara [A. Dondoni *et al.*, *Chem. Rev.*, May 24, 2010 issue] entitled "Calixarene and Calixresorcarene Glycosides: Their Synthesis and Biological Applications" has appeared.

◆ A feature article [P. Stano, P.L. Luisi, *Chem. Commun.*, 2010, **46**, 3639], a contribution from the Università di Roma Tre, deals with the self-reproduction of vesicles and synthetic minimal cells. The growth in size and number of the vesicle population is discussed, self-reproduction implying cellular growth and division. The growth in size and number of vesicles resembles the pattern of living cells, although it occurs exclusively through physical forces.

◆ Issues 5 and 6 of *Coord. Chem. Rev.*, March 2010, pp. 387–764, contains twenty articles on several important aspects of coordination- and organometallic chemistry. This issue, which contains a preface by G. Pampaloni of the Università di Pisa, deals with problems related to structure and reactivity of metal-containing compounds.

◆ A contribution from the University of Helsinki (Helsinki Yliopisto) [M.P. Johansson *et al.*, *Chem. Commun.*, 2010, **46**, 3762] reports that the tungsten gold/tungsten cluster $\text{WAu}_{12}(\text{CO})_{12}$, previously reported by a Chinese group [X. Li, *Angew. Chem. Int. Ed. Engl.*, 2002, **41**, 4786]

should have I_h symmetry with a binding energy *per* carbonyl group of about 100 kJmol⁻¹. ◆ It is interesting to note that the anionic clusters containing the $\text{Pt}_{13}(\text{CO})_{12}$ core were found by the Group operating at the Università di Bologna to have local icosahedral symmetry. A description of this type of systems can be found in the following recent publication by this research group [C. Femoni *et al.*, *Coord. Chem. Rev.*, 2006, **250**, 1580].

◆ The Università di Firenze, in collaboration with the National Gallery of Washington DC, and with Georgetown University has reported [E. Carretti *et al.*, *Acc. Chem. Res.*, 2010, **43**, 751] on the problem of cleaning painted surfaces and removing degraded coatings. This account mainly deals with the properties of three classes of innovative gels for use in artwork, namely rheoreversible, magnetic and "peelable" gels.

◆ An earlier contribution from the Università di Firenze, in collaboration with Georgetown University [E. Carretti *et al.*, *Langmuir*, 2009, **25**, 8656], has described the formation of hydrogels based on the poly(vinyl alcohol)/borate system modified by the addition of a cosolvent: it has been applied to an actual painting of historic and artistic value.

◆ In March 2010 a book has appeared for Springer entitled "Advances in Macromolecules: Perspectives and Applications" by M.V. Russo of the Università di Roma. This book is divided in 5 chapters; (1) Nanostructured macromolecules; (2) Macromolecular systems with second order nonlinear optical properties; (3) Macromolecular systems with nonlinear optical properties: optical characterization and devices; (4) Functional and nanostructured materials investigated by XPS and NEXAFS spectroscopies; (5) Hybrid systems biomolecule-polymeric nanoparticles: synthesis, properties and biotechnological applications. An Appendix is based on principal characterization techniques of nanostructured macromolecules.

◆ A contribution from the University of Bristol has appeared [C.J. Adams *et al.*, *Dalton Trans.*, 2010, **39**, 3714] dealing with the coordination chemistry of platinum and palladium and describing, *inter alia*, the solid-state reactions of K_2MCl_4 or MCl_2 , $\text{M} = \text{Pd}$, or Pt , with imidazolium chloride (H_2Im)Cl leading to the tetrachloro metallato derivatives. Reactions in the solid state are of considerable interest, due to the absence of a solvent, often a problematic partner of reactions.

◆ A review-article describes the transformation of inexpensive graphite precursors into single-layer or multiple-layer graphenes using ultrasonication as the key-step. Formation of stable colloids is realized, according to a contribution from the Università di Torino, in collaboration with the Departamento de Química Inorgánica, Universidad de Extremadura, in Badajoz, Spain [G. Cravotto *et al.*, *Chem. Eur. J.*, **2010**, in the press].

◆ A paper contributed by the Università dell'Insubria, by the INSTM Institution in Como, and by the Università di Padova [E. Fois *et al.*, *Angew. Chem., Int. Ed.*, 2010, **49**, 1944] has reported a theoretical model of the first activation stages of a copper(II) complex on a heated (750 K) surface, occurring through mobility regimes, a "bump-and-rock"

diffusion (slow) and a “roll-and-go” motion.

◆ A contribution [G. Poneti *et al.*, *Angew. Chem., Int. Ed.*, 2010, **49**, 1954] from several Institutions (the Laboratory of Molecular Magnetism of the Università di Firenze, the Istituto di Scienza e Tecnologia dei Materiali of CNR in Sesto Fiorentino, Firenze, and the Université Pierre et Marie Curie in Paris), has shown that the interconversion of the redox isomers of a cobalt–dioxolane derivative (catecholato interconverting to semiquinonato) is stimulated by soft X-ray radiation.

◆ D. Diana *et al.* [*Chem. Eur. J.*, 2010, **16**, 5400] have reported on a structural analysis of a helical peptide unfolding pathway in a contribution from some Institutions of CNR located in Napoli, in collaboration with the Università di Napoli, and a CNR Institution in Milano. Spectroscopic and computational techniques suggest that the initial phase of the thermal helix unfolding, terminating at about 320 K, mainly involves the terminal regions of the peptide, *i.e.* a 15–mer vascular endothelial growth factor mimicking an α -helical peptide.

◆ A review–article contributed by the Universität Duisburg–Essen [S. Harder, *Chem. Rev.*, April 26th 2010 issue] is dedicated to the use of calcium compounds as homogeneous catalysts. Within this article, mention was made of a contribution from the Università di Brescia [M. Penco *et al.*, *Macromol. Chem. Phys.*, 1998, **199**, 1737] reporting the ring–opening of cyclic ethers catalyzed by early– and late transition metals. Biodegradable polymers find application in the area of medicine, such as screws for bone fixation, drug delivery systems and tissue engineering.

◆ A review–article resulting from the collaboration of several European Institutions including the Università di Milano [P. Hoyost *et al.*, *Acc. Chem. Res.*, 2010, **43**, 288] describes the biocatalytic synthesis of asymmetric α -hydroxy–ketones. Three different systems were described aimed at obtaining the target compounds: (a) thiamine–dependent lyases to catalyze the Umpolung carbonylation of aldehydes; (b) hydrolysis to α -hydroxyketones by means of *in situ* dynamic kinetic resolution; (c) redox processes catalyzed by micro–organisms.

◆ A review–article deals with the theoretical treatment of early actinide (from uranium through americium) compounds [G. Schreckenbach *et al.*, *Acc. Chem. Res.*, 2010, **43**, 19], as a contribution from the Canadian University of Manitoba. An intense activity in the field of actinide– and lanthanide organometallics in connection with their use as polymerization precursors has been carried at the Laboratories of EniChem in S. Donato M. and Novara [G. Lugli, P. Biagini *et al.*], in connection with their use as polymerization promoters. Moreover, a contribution from the Università di Pisa [U. Abram *et al.*, *Acc. Chem. Commun. Res.*, **1999**, 2053] has described the synthesis, and the crystal and molecular structures of the class of the isostructural compounds $[\text{Ln}(\text{O}_2\text{CNR}_2)_4]$ covering a range of 11 atomic numbers of the lanthanide(III) elements.

◆ A contribution from the Università di Roma “La Sapienza” [J. Hassoun *et al.*, *Angew. Chem., Int. Ed. Engl.*, 2010, **49**, 2371] deals with the per-

formance of a (tin/sulphur/lithium) battery having an energy density value of about 1,000 Wxhxg^{–1}.

◆ The Università di Bologna and Imperial College London [G. Tomasello *et al.*, *Angew. Chem., Int. Ed. Engl.*, 2010, **49**, 2913] have presented a computational model describing the photocyclization of a furyl fulgide [e.g., (E)- α -(2,5–dimethyl–3–furylethylidene)(isopropylidene) succinic anhydride, abbreviated as 3–furyl–fulgide].

◆ A contribution from the Université de Rennes [J.–F. Carpentier, *Angew. Chem., Int. Ed. Engl.*, 2010, **49**, 2662] reports a syndiospecific yttrium catalyst operating by a chain–end–control mechanism and leading to a mixture of two different enantiomerically pure 4–substituted β -propiolactones of opposite absolute configuration.

◆ A contribution from several institutions including the Università di Pavia [I. Garcia–Bosch *et al.*, *Angew. Chem. Int. Ed. Engl.*, 2010, **49**, 2406] deals with the problem of dioxygen activation by a dicopper(II) complex containing a bridging O₂–ligand. This complex selectively binds phenolato groups and mediates their ortho–hydroxylation.

◆ The collaboration of the Università di Bologna with the Université de Strasbourg [A. Ciesielski *et al.*, *Angew. Chem. Int. Ed. Engl.*, 2010, **49**, 1963] has led to a paper describing the assembly/re–assembly process in monolayers of octadecyl guanine, triggered by addition of a [2.2.2] cryptand, potassium picrate, or CF₃SO₃H.

◆ A paper contributed by the Università di Trieste in collaboration with other institutions in Switzerland and UK [S.P. Jones *et al.*, *Chem. Eur. J.*, 2010, **49**, 1963] reports the synthesis, DNA binding, and gene delivery profiles of dendrons with some amine derivatives. The dendrons with spermine groups are the most effective DNA binders.

◆ A contribution from the Università di Padova in collaboration with the Università di Firenze [L. Elisa *et al.*, *Chem. Commun.*, 2010, **46**, 3678] reports that a melanine–bridged porphyrin of zinc(II) covalently bonded to a TentaGel resin undergoes a reversible colour change from purple to green upon exposure to a diamine of biological origin, e.g. cadaverine, both in organic– and aqueous media.

◆ A paper has appeared [A. Martinez *et al.*, *Nano Lett.*, 2010, **10**, 1506] contributed by some European research institutions including the Università di Trento, describing the use of a switching device comprising a compact ring resonator with horizontal silicon slot waveguides filled with Si–nanocrystals in SiO₂. The switch is one–order of magnitude faster than previous devices based on silicon.

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