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Research Article

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Chemical and physical stability of selected drugs for aerosol therapy with Sirmione thermal water

Published On: July 10, 2021 | Pages: 029 - 033

Author(s): Francesco Saverio Robustelli della Cuna*, Carlo Sturani, Sarah Galfrè, Luisa Gervasio, Cristina Sottani and Elena Grignani

In this work, we investigated the chemical and physical stability of ambroxol, beclomethasone dipropionate, budesonide and N-acetylcysteine after dilution with Sirmione thermal water, stored in ampoules for aerosol, at room temperature. The chemical stability of all active drugs was evaluated by Ultra-High-Performance Liquid Chromatography tandem mass spectrometry (UH ...

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Preparation of Aluminium dodecaboride (AIB12) powder by Self-propagating High-temperature Synthesis (SHS)

Published On: February 18, 2021 | Pages: 025 - 028

Author(s): Chao Wang*, Xiaoming Cao, Mengge Dong, Lu Zhang, Jianxing Liu, Xiaozhou Cao and Xiangxin Xue*

Self-propagating High-temperature Synthesis (SHS) process is used to prepare Aluminium dodecaboride (AIB12). The phase analysis results of preparing AIB12 with Al and B₂O₃ as raw materials show that under air and argon conditions, the self-propagating and acid-washed self-propagating powders all have -Al₂O₃ impurities when Mg, Al and B₂O₃ are used as raw materials. T ...

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Equalization principles in open subsystems, origins of information descriptors

and state-continuity relations

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Author(s): Roman F Nalewajski*

The electronegativity-equalization at several hypothetical stages of chemical reactions is reexamined and phase-equalization in open substrates is explored. The equivalence of the energy and information reactivity criteria is stressed and local energy concept is shown to determine time-evolutions of wavefunction components. Independent sources of information content i ...

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A proposal on a catalyst for the reaction methane + water => methanol + hydrogen

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Author(s): Ragnar Larsson*

Based on the concepts and vocabulary of the SET model of catalysis a discussion is performed on what properties should characterize a catalyst promoting a reaction such as the one in the title, i.e., the production of methanol from methane in a non-oxidative environment. It is found that the ν_1 vibration of water (3652 cm^{-1}) and the ν_4 vibration of methane (1306 cm^{-1}) ...

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Opinion

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Biofuels and biochemicals from biomass

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Author(s): Indra Neel Pulidindi and Aharon Gedanken*

Among various renewable energy sources, namely, biomass, solar, wind, hydrothermal and geothermal, biomass stand out as an environmentally benign, sustainable and an immediate substitute to fossil based fuels. This is due to the abundance of the carbon source in the form of cellulose in the biomass. Cellulose is the major chemical constituent of terrestrial biomass (40 ...

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Perspective Study

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Nano porous systems for storing hydrogen-based clean fuel

Published On: December 14, 2021 | Pages: 034 - 034

Author(s): Harsh Prashar*

Rapid growth in population, Concerns about the industrial revolution, environmental and energy issues are growing, and are urging the use of clean, renewable energy sources to ameliorate the dire situation. Hydrogen is an ideal synthetic fuel because it is light, very broad, and is an oxidation product (water), i.e. environmentally friendly, but storage problems remain ...

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