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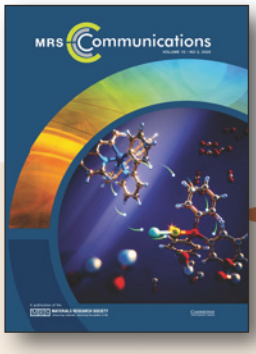

Electrochemical molecularly imprinted polymers in microelectrode devices

Vitalys Mba Ekomo, Catherine Branger, Ana-Mihaela Gavrila, Andrei Sarbu, Dimitrios A. Koutsouras, Clemens Stolz, George G. Malliaras, Hugues Brisset

Electrochemical molecularly imprinted polymers are useful as sensors, taking advantage of the redox behavior of the sensor element and the ability to demonstrate the lock and key mechanism principles. The authors highlight the use of ferrocene acrylate systems that enable characterization of analytes at various media.
doi.org/10.1557/mrc.2020.29

Sample geometry effect on mechanical property of gold micro-cantilevers by micro-bending test

Kosuke Suzuki, Tso-Fu Mark Chang, Ken Hashigata, Keisuke Asano, Chun-Yi Chen, Takashi Nagoshi, Daisuke Yamane, Hiroyuki Ito, Katsuyuki Machida, Kazuya Masu, Masato Sone

Micro-cantilevers are sensitive to the surface and mechanical properties at the microscale. The authors highlight the importance of the sample geometry in such applications to enable parametrization in stress behavior for different evaluated materials. doi.org/10.1557/mrc.2020.38

Organic superhydrophobic coatings with mechanical and chemical robustness

Sajia Afrin, David Fox, Lei Zhai

Superhydrophobic surfaces with the ability to control surface properties of various liquids and the immediate interfacial layer have the advantage of dynamic properties that can lead to robustness in practical applications. The authors highlight one example of an optimized coating materials chemistry to produce durable coatings.
doi.org/10.1557/mrc.2020.33

En route toward sustainable organic electronics

Alexandra Zvezdin, Eduardo Di Mauro, Denis Rho, Clara Santato, Mohamed Khalil

Consumer electronics have caused an unsustainable amount of waste electrical and electronic equipment. Organic electronics, by means of eco-design, represent an opportunity to manufacture compostable electronic devices. In this perspective, the authors introduce a complementary route to making electronics more sustainable: organic electronics based on biodegradable materials and devices. doi.org/10.1557/mre.2020.16

Passive daytime radiative cooling: Principle, application, and economic analysis

Yuan Yang, Yifan Zhang

Passive daytime radiative cooling (PDRC) is an electricity-free method for cooling terrestrial entities. In PDRC, a surface has a solar reflectance of nearly 1 to avoid solar heating, and a high emittance close to 1 in the long-wavelength infrared transparent window of the atmosphere for radiating heat to the cold sky, allowing the surface to passively achieve subambient cooling. The authors describe the principle and applications, analyzing cost and economic and environmental consequences. doi.org/10.1557/mre.2020.18

The pathway to 100% renewable must include changes in regulation, focus on operations, and promotion of innovation

Rao Konidena, Vivek Bhandari

The electric industry is transitioning to higher penetrations of renewables. Full renewable penetration is no longer a pipe dream. Rather than by doubling down on existing renewable technologies, the authors present the perspective that it can be achieved by cohesively focusing on operational needs and working on regulation, operations, and innovation (e.g., newer technologies like hydrogen).
doi.org/10.1557/mre.2020.19

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