

Editoria - agosto 2018

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Il Nuovo Saggiatore

Il nuovo numero de *Il Nuovo Saggiatore*, Vol. 34, n. 3-4 (2018) è ora disponibile **online**.

In questo numero troverete interessanti articoli su

- The Trojan Horse Method
- The flavour puzzle and the B-decay anomalies
- Liquid phase and thermodynamics of water
- The origins of the INFN Padua unit
- Who discovered superfluidity? (articolo in libera consultazione nello **spazio online** "free to read" de *Il Nuovo Saggiatore*)
- Nuclear Thresholds

Nella rubrica *Il Nostro Mondo* sono presentati il programma generale del 104° Congresso Nazionale SIF ad Arcavacata di Rende, un articolo sul cinquantenario della nascita della Società Europea di Fisica e infine un articolo sugli stereotipi della professione fisico nella filmografia hollywoodiana. Nella consueta *Intervista* in questo numero incontriamo Catherine Langlais, eletta presidente della Società Francese di Fisica ma al contempo Direttore del dipartimento Ricerca e Sviluppo della prestigiosa ditta Saint Gobain.

Se non lo avete ancora fatto, vi invitiamo ad associarvi o a rinnovare la vostra associazione alla SIF per ricevere la copia cartacea del Nuovo Saggiatore. Il Nuovo Saggiatore è fruibile online e su APP per tutti i soci in regola.



EPJ – Call for papers

EPJA Topical Issue: The first Neutron Star Merger Observation - Implications for Nuclear Physics

Deadline for submission: 31 October 2018.

Authors are invited to submit their paper electronically through the website <https://mc.manuscriptcentral.com/epja>. Submissions should be clearly identified as intended for the Topical Issue "The first Neutron Star Merger Observation - Implications for Nuclear Physics".

EPJ E – Highlights

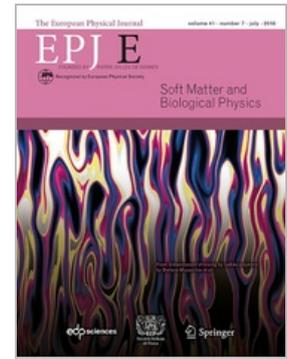


Correlation between polar surface area and bioferroelectricity in DNA and RNA nucleobases

C. Yam, S. M. Zain, V. S. Lee, K.-H. Chew

DNA and RNA are naturally polarised molecules containing electric dipole moments due to the presence of a significant number of charged atoms at neutral pH. Scientists believe that these molecules have an in-built polarity that can be reoriented or reversed fully or in part under an electric field—a property referred to as bioferroelectricity. However, the mechanism of these properties remains unclear. In a new study published in EPJ E, See-Chuan Yam from the University of Malaya, Kuala Lumpur, Malaysia, and colleagues show that all the DNA and RNA building blocks, or nucleobases, exhibit a non-zero polarisation in the presence of polar atoms or molecules such as amidogen and carbonyl. They have two stable states, indicating that DNA and RNA basically have memory properties, just like a ferroelectric or ferromagnetic material. This is relevant for finding better ways of storing data in DNA and RNA because they have a high capacity for storage and offer a stable storage medium. Such physical properties may play an important role in biological processes and functions. Specifically, these properties could also be extremely useful for possible applications as a biosensor to detect DNA damage and mutation.

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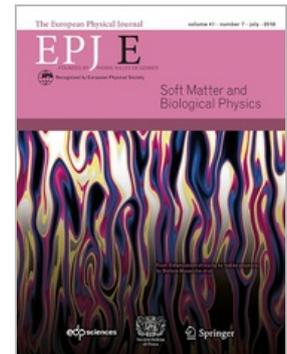
EPJ E – Colloquium

Drying colloidal systems: Laboratory models for a wide range of applications

P. Bacchin et al.

The drying of complex solutions, such as colloidal dispersions, is a phenomenon of great interest, both scientific and technical, ranging from functional coatings, food science, cosmetology, medical diagnostics and forensics to geophysics and art. This EPJ E Colloquium discusses a wide variety of problems related to the drying of colloidal systems, from the stabilization of dairy products to cracking phenomena that occur at surface of planets or on an oil painting. The diversity of these processes lies in the great variability in size and/or time scales and makes it very hard to understand and analyse the mechanisms at play. The results presented in this review attest of the reliability of experimental modelling in the laboratory, a clever way to use the drying of complex fluids to reproduce and study original mechanisms.

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EPL – Highlights from the previous volumes

Insect-like vibrating winged NAV

by *D. Faux et al.*

Evidence of long-range correlations in shallow earthquake

by *D. Ferreira et al.*

Manipulating spins of magnetic molecules

by *A. Płomińska et al.*

Optimal growth entails risky localisation in population dynamics

by *T. Gueudré, D. G. Martin*

EPL Highlights are published in the first issue of each volume, *i.e.* four times a year, as well as in Europhysics News (EPN).

