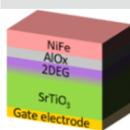


## At the front IRIG

### Controlling and detecting spin currents by ferroelectricity

The generation and detection of spin currents can now be done in a much less energy-intensive manner using non-magnetic interfaces controlled by electric fields.

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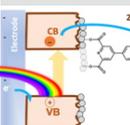
**J-P Attané & L. Vila  
Spintec**

*Nature, 2020*

### Artificial photosynthesis

A further step towards the preparation of a sustainable photoelectrode for hydrogen production. This photoelectrode consists of a p-type semiconductor that absorbs light and is interfaced with a molecular catalyst containing only elements abundant on earth.

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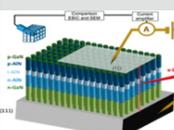
**C. Tapia-Garcia &  
V. Artero  
CBM**

*Green Chemistry, 2020*

### Towards efficient and mercury-free LEDs

A significant breakthrough has been achieved to banish mercury from deep ultraviolet light-emitting diodes used in water and air treatment, disinfection, counterfeit detection etc...

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**Bruno Daudin  
Pheliqs**

*Nano Letters, 2019*

### MAP6, a neuronal protein in the lumen of microtubules

MAP6 - a neuronal protein that stabilizes microtubules - can localize in the lumen of microtubules. A pioneering discovery that opens up a completely new field of investigation to understand this hidden side of microtubules.

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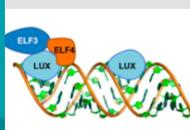
**Annie Andrieux  
GPC**

*Science Advances, 2020*

### A "thermometer" protein that controls the flowering of plants

The activity of the Evening Complex is controlled by changes in temperature, and it regulates the expression of genes involved in plant growth and flowering. A hot topic as global warming is causing plants to flower earlier and earlier.

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**Chloe Zubieta  
LPCV**

*Proc Natl Acad Sci USA, 2020*

### miRViz: Viewing and analyzing microRNA data

miRViz is an open-access website that uses the power of network to visually analyze data from microRNAs, those small RNAs that do not code for any proteins but are major regulators of gene expression.

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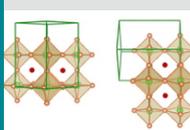
**Laurent Guyon  
BCI**

*Nucleic Acids Research, 2020*

### Photovoltaic cells based on hybrid perovskites

This original study of the crystallization behaviour of MAPbI<sub>3</sub> allowed to correlate crystallization mechanisms, structural properties and efficiency of photovoltaic devices based on hybrid perovskites.

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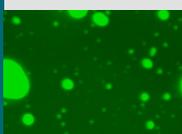
**Stéphanie Pouget  
MEM**

*Chemistry of Materials, 2020*

### Watching measles virus factories at work in liquid droplets

This study reveals how measles virus viral replication could be reduced and how these results could be used to define new pharmacological targets to combat these viruses.

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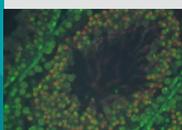
**Martin Blackledge  
IBS**

*Science Advances, 2020*

### Multi-omics for understanding the regulation of gene expression

Multi-omics data on the acetylation and crotonylation dynamics of lysine 27 of histone H3 provide an unprecedented level of understanding of the regulation of gene expression and reveal both the synergistic and specific actions of each histone modification.

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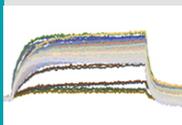
**Delphine Pflieger  
BGE**

*Nucleic Acids Research, 2020*

### New eyes for an optoelectronic nose

The study of the influence of LED wavelength on the sensitivity of gas phase SPR imaging prisms and studies of the effect of the different metallic layers deposited on these prisms make it possible to improve the performance of the optoelectronic nose.

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**Y. Hou & A. Buhot  
SyMMES**

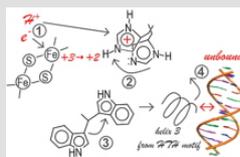
*J. Phys. Chem. C, 2020  
Talanta, 2020*

# Other scientific news of the IRIG laboratories



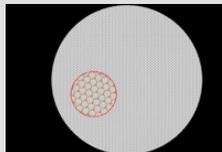
**Fusion: Finalizing the assembly of JT-60SA**

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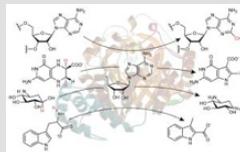
**How an electron and a proton modulate protein binding to DNA**

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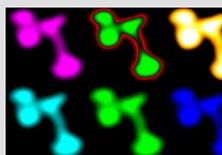
**Fare side of SiC wafers**

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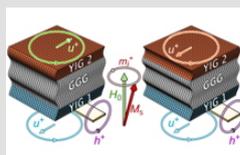
**A tightly controlled radical-based chemistry!**

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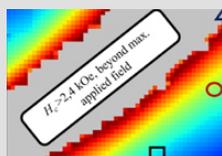
**Looking at long non-coding RNAs from a 3D structural perspective**

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**All-optical switching of magnetization in Tb/Co-multilayer based electrodes**

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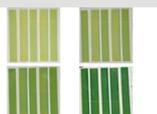
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**Bernard Diény at the Computer History Museum**



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**A first step towards photochromic photovoltaic window panes**



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