

**DR. JOHN KITCHING**

Group leader au NIST

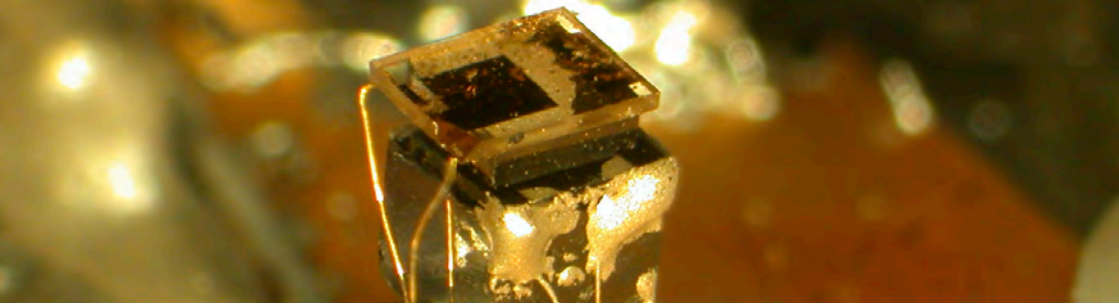
National Institute of Standards and Technology, Boulder, Colorado, USA

Distinguished Lecturer Program de la société IEEE Sensors

**Mercredi 26 septembre 2018 à 17h**

Petit auditoire, bâtiment G Unimail (Avenue de Bellevaux 51)

**CHIP-SCALE ATOMIC DEVICES : MINIATURE  
PRECISION INSTRUMENTS USING ATOMS,  
LASERS AND SILICON MICROMACHINING**



## DR. JOHN KITCHING

**Group leader and Fellow**

**National Institute of Standards and Technology  
Boulder, CO USA**

There is currently a strong movement worldwide toward portable, battery operated, wirelessly connected devices such as GPS receivers, cellular telephones and laptop computers and tablets. This new generation of electronics enables vast new capability, but also comes with new challenges such as bandwidth limitations, sensitivity to jamming and reduced access to calibration. A new generation of miniature, low-power, low-cost precision instruments is being developed at NIST for use in such portable technologies. These include clocks, magnetometers, gyros and wavelength references, all based on precision atomic spectroscopy and using emerging new fabrication capabilities such as microelectromechanical systems and photonics. This talk will describe the design, fabrication and performance of these instruments, as well as touch on several applications to which they are well-suited. Finally, we will speculate on future opportunities for these types of devices such as compact instruments based on laser-cooled atoms and a broader view on highly accurate chip-scale measurements.

**Conférence organisée par le Laboratoire Temps - Fréquence (LTF)  
de l'Université de Neuchâtel**

**L'entrée est gratuite. Apéritif dinatoire offert après l'exposé.**

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