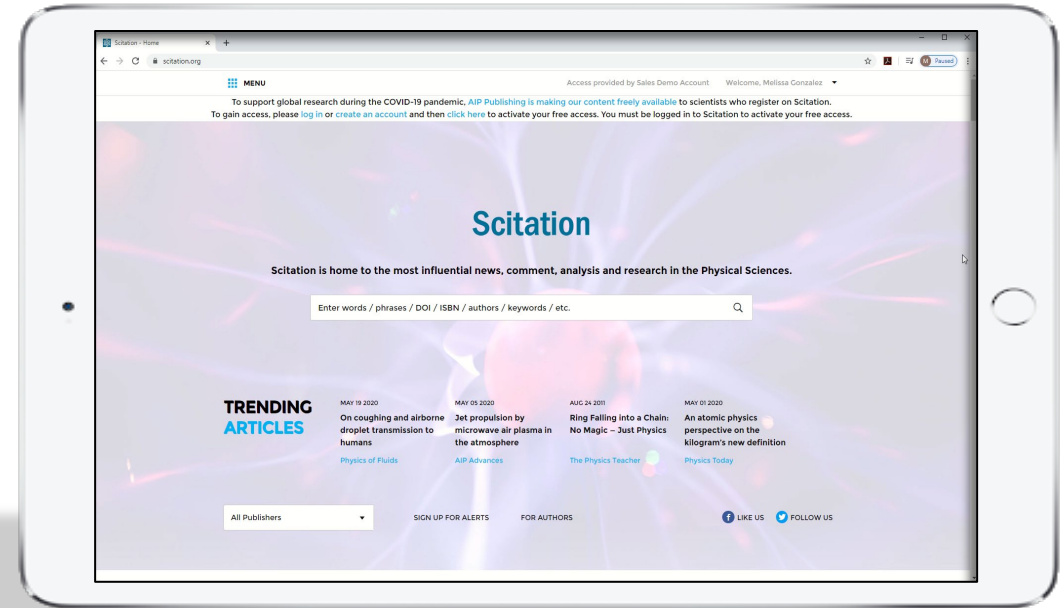


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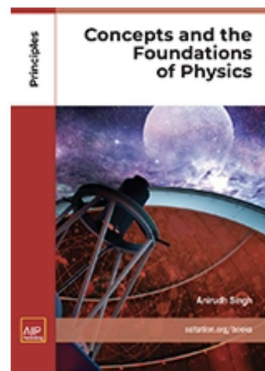
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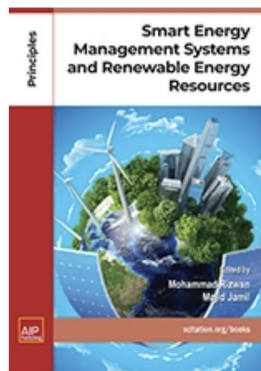
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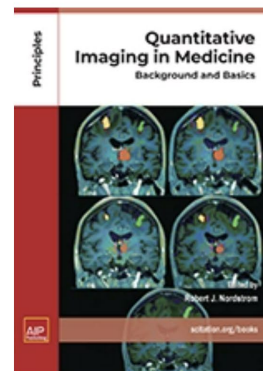
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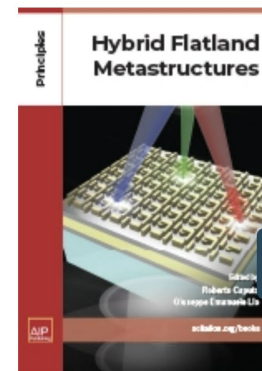
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## Transient Currents in Nanoscopic Circuit

Salvador Godoy and Yoshinobu Okamura  
AIP Conference Proceedings **757**, 56 (2005); <https://doi.org/10.1063/1.190>

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## Size distributions of nanoscopic holes in nanocomposites

J. Čížek, I. Procházka, O. S. Morozova, C. Borchers and A. Pundt  
Journal of Applied Physics **107**, 043509 (2010); <https://doi.org/10.1063/1.3>

Full . Nov 1, 2003

## Nanoscopic magnetic field sensor based magnetoresistance

S. A. Solin, D. R. Hines, A. C. H. Rowe, J. S. Tsai and Yu A. Pashkin  
Journal of Vacuum Science & Technology B: Microelectronics and Nanom Phenomena **21**, 3002 (2003); <https://doi.org/10.1116/1.1627811>

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## Nanoscopic friction as a probe of local p

Robert Szoszkiewicz and Elisa Riedo  
Appl. Phys. Lett. **87**, 033105 (2005); <https://doi.org/10.1063/1.1995954>

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# Silicon cantilevers locally heated from 300 K up to the melting point: Temperature profile measurement from their resonances frequency shift

EP

Journal of Applied Physics 129, 184503 (2021); <https://doi.org/10.1063/5.0040733>Basile Pottier<sup>1</sup>, Felipe Aguilar Sandoval<sup>2</sup>, Mickaël Geitner<sup>1</sup>, Francisco Esteban Melo<sup>3</sup>, and Ludovic Bellon<sup>1,a)</sup>

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## ABSTRACT

When heated, micro-resonators present a shift of their resonance frequencies. We specifically silicon cantilevers heated locally by laser absorption and evaluate the and experimentally their temperature profile and its interplay with the mechanic resonances. We present an enhanced version of our earlier model [Sandoval *et al.* Phys. 117, 234503 (2015)], including both elasticity and geometry temperature dependence showing that the latter can account for 20% of the observed shift for the first flexural mode. The temperature profile description takes into account thermal clamping conditions, radiation at high temperature, and lower conductivity than bulk silicon due to phonon confinement. Thanks to space-power equivalence in the heat equation, scanning the heating point along the cantilever directly reveals the temperature profile. Finally, frequency shift measurement can be used to infer the temperature field with a few percent precision.

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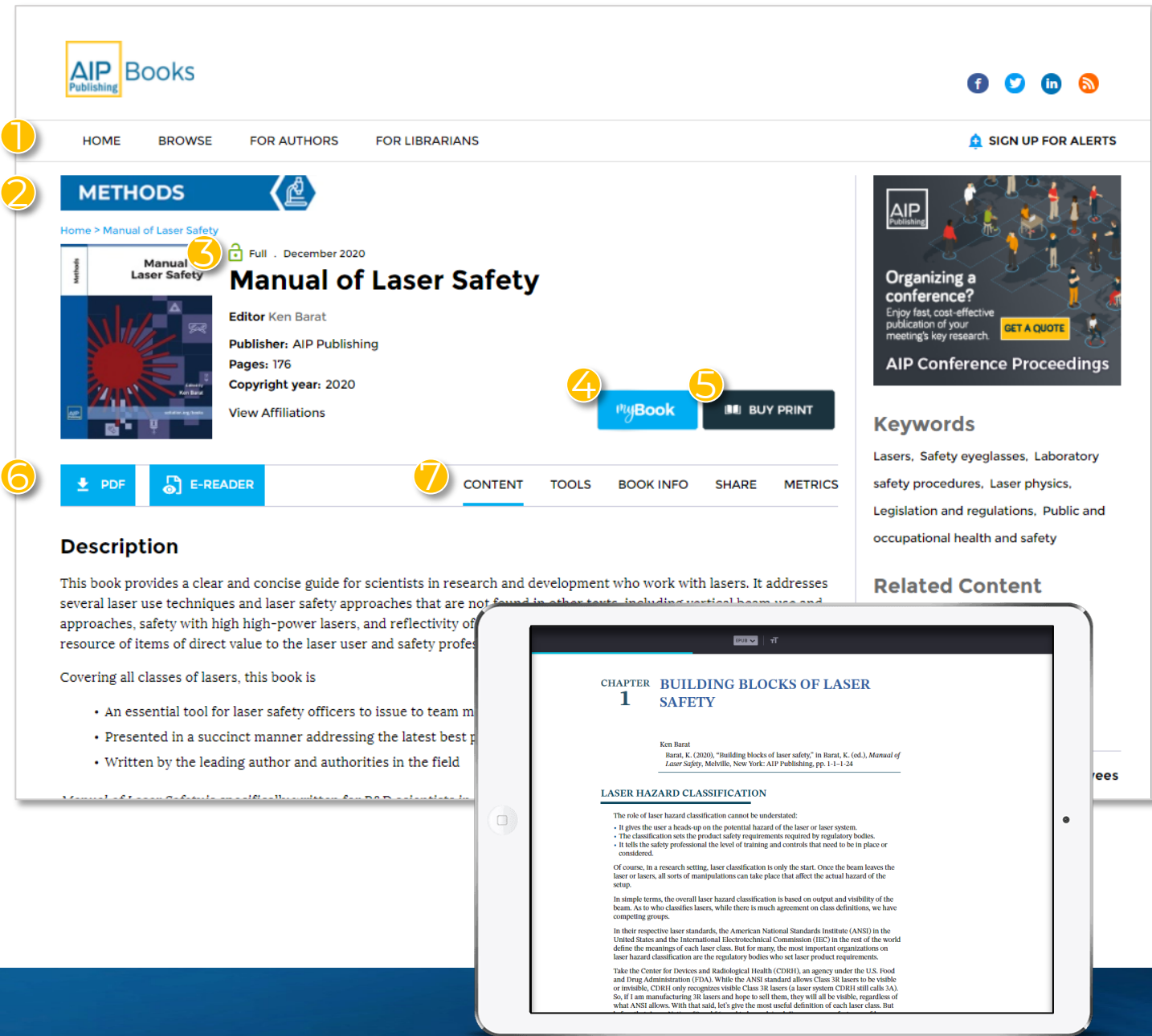
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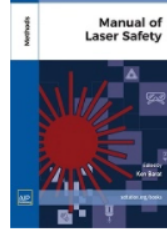
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1 Chapter 1 Building Blocks of Laser Safety

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2 Author Ken Barat



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Laser Hazard Classification

The role of laser hazard classification cannot be understated:

- It gives the user a heads-up on the potential hazard of the
- The classification sets the product safety requirements required by regulatory bodies.
- It tells the safety professional the level of training and controls that need to be in place or considered.

Of course, in a research setting, laser classification is only the start. Once the beam leaves the laser or lasers, all sorts of manipulations can take place that affect the actual hazard of the setup.

In simple terms, the overall laser hazard classification is based on output and visibility of the beam. As to who classifies lasers, while there is much agreement on class definitions, we have competing groups.

In their respective laser standards, the American National Standards Institute (ANSI) in the United States and the International Electrotechnical Commission (IEC) in the rest of the world define the meanings of each laser class. But for

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