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Nota di contenuto	1. Theoretical study of superconductivity in 4-Angstrom carbon nanotube arrays / Ting Zhang, Mingyuan Sun, Zhe Wang, Wu Shi, Rolf Lortz, Zikang Tang, Ning Wang, and Ping Sheng -- 2. The search for superconductivity at van Hove singularities in carbon nanotubes / Yanfei Yang, Georgy Fedorov, Jian Zhang, Alexander Tselev, Serhii Shafranjuk, and Paola Barbara -- 3. Superconductivity in carbon nanotubes : one-dimensional electron correlation / Junji Haruyama -- 4. Electronic structure, carrier doping, and superconductivity in nanostructured carbon materials / Takashi Koretsune and Susumu Saito -- 5. Superconductivity in carbon nanotubes : limitations, competition, and implementation toward higher Tc / Jian He, Keqin Yang, Jason Reppert, Malcolm Skove, and Apparao M. Rao -- 6. Enhancement of superconductivity and lattice instability in graphite-intercalated CaC6 / Andrea Gauzzi, Nedjma Bendiab, Matteo d'Astuto, Bernard Canny, Matteo Calandra, Francesco Mauri, Genevieve Loupias, Shinya Takashima, Hidenori Takagi, Nao Takeshita, Chieko Terakura, Nicolas Emery, Claire Herold, Philippe Lagrange, Michael Hanfland, and Mohamed Mezouar -- 7. High-resolution ARPES study of superconducting C6Ca / Katsuaki Sugawara and Takashi Takahashi -- 8. Theory for reliable first-principles prediction of the superconducting transition temperature / Yasutami Takada -- 9. Surface

superconductivity in rhombohedral graphite / Nikolai B. Kopnin and Tero T. Heikkila -- 10. Superconductivity and local structure in boron-doped diamond / Hidekazu Mukuda -- 11. Superconductivity in boron-doped SiC / Takahiro Muranaka.

Sommario/riassunto

Superconductors (SCs) are attractive materials in all respects for any community. They provide a deep insight into the physical properties of the condensed matters and also have useful applications as ultra-low-power-dissipation systems that can help resolve the present energy problems. In particular, the recent advancement of carbon-based new superconductors (CNSCs) is significant. Before 2004, the superconducting transition temperature (Tc) of carbon-based SCs was below 1 K, except in fullerene clusters. However, in 2004, a Russian group discovered that diamond highly doped with boron could