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Nota di contenuto	Part I. Surgical devices and the operating room -- 1) Lightweight Carbon-reinforced Resin Surgical Instruments -- 2) Forceps-type palpation system for laparoscopic surgery -- 3) Ultrahigh definition (8K UHD) video system and video-assisted surgery in the near future -- 4) Monitoring of surgeon's surgical skills using Internet-of-Things-enabled medical instruments -- Part II. Medical materials and regenerative medicine -- 5) Regenerative medicine in the operating room at present and in the near future -- 6) Surgery and Operating Room for Restoring Organs – Organ Regeneration by Tissue Engineering in The Near Future -- Part III. Artificial intelligence and virtual reality -- 7) Extended reality (XR:VR/AR/MR), 3D printing, Holography, A.I. , Radiomics, and online VR tele-medicine for precision surgery -- 8) Application of AI in endoscopic surgical operations -- Part IV. Navigation surgery -- 9) Application of ICG fluorescent endoscope systems in identifying small lung cancers on the periphery of the lungs in thoracoscopic surgery -- 10) Novel multispectral device for quantitative imaging of tissue oxygen saturation and hemoglobin as surgical navigation device -- 11) Clinical benefit of mixed reality holographic cholangiography for image-guided laparoscopic cholecystectomy -- Part V. Robotic Surgery -- 12) Development of laparoscopic surgery by means of foldable small humanoid robot handswith tactile sensation for laparoscopic surgery -- 13) Robotic surgery - Currently and in the near future.

## Sommario/riassunto

This book presents cutting-edge surgical techniques and the new operating rooms supporting them, as well as their future developments. In recent years, with the advances in surgical medicine, surgical techniques have undergone great changes. However, safety and reliability are still the major requirements of the operating room, and these are closely linked to the patients' wellbeing. The new medical instruments and medical materials being developed to perform surgery more safely, reliably and efficiently are vital technologies supporting this. "New techniques" involve the introduction of innovative medical instruments and medical materials, and these, too, are increasing in terms of performance and size every year. Surgery and Operating Room Innovation discusses these issues from the perspective of various professionals involved with operating rooms. .

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