

1. Record Nr.	UNINA9910483922403321
Titolo	New stream cipher designs : the eSTREAM finalists // Matthew Robshaw, Olivier Billet (eds.)
Pubbl/distr/stampa	Berlin ; ; New York, : Springer, c2008
ISBN	3-540-68351-8
Descrizione fisica	1 online resource (VIII, 293 pages.) : illustrations
Collana	Lecture notes in computer science, , 0302-9743 ; ; 4986 LNCS sublibrary. SL 4, Security and cryptography
Altri autori (Persone)	RobshawMatthew BilletOlivier
Disciplina	005.8
Soggetti	Computer security Data encryption (Computer science) Stream ciphers Coding theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	The eSTREAM Project -- CryptMT3 Stream Cipher -- The Dragon Stream Cipher: Design, Analysis, and Implementation Issues -- The Stream Cipher HC-128 -- Design of a New Stream Cipher—LEX -- Specification for NLSv2 -- The Rabbit Stream Cipher -- The Salsa20 Family of Stream Ciphers -- Sosemanuk, a Fast Software-Oriented Stream Cipher -- eSTREAM Software Performance -- Decim v2 -- The Stream Cipher Edon80 -- F-FCSR Stream Ciphers -- The Grain Family of Stream Ciphers -- The MICKEY Stream Ciphers -- The Self-synchronizing Stream Cipher Moustique -- Cascade Jump Controlled Sequence Generator and Pomaranch Stream Cipher -- Trivium -- ASIC Hardware Performance.
Sommario/riassunto	This state-of-the-art survey presents the outcome of the eSTREAM Project, which was launched in 2004 as part of ECRYPT, the European Network of Excellence in Cryptology (EU Framework VI). The goal of eSTREAM was to promote the design of new stream ciphers with a particular emphasis on algorithms that would be either very fast in software or very resource-efficient in hardware. Algorithm designers were invited to submit new stream cipher proposals to eSTREAM, and

34 candidates were proposed from around the world. Over the following years the submissions were assessed with regard to both security and practicality by the cryptographic community, and the results were presented at major conferences and specialized workshops dedicated to the state of the art of stream ciphers. This volume describes the most successful of the submitted designs and, over 16 chapters, provides full specifications of the ciphers that reached the final phase of the eSTREAM project. The book is rounded off by two implementation surveys covering both the software- and the hardware-oriented finalists.--

2. Record Nr.	UNINA9911020370003321
Titolo	Optical refrigeration : science and applications of laser cooling of solids // edited by Richard Epstein and Mansoor Sheik-Bahae
Pubbl/distr/stampa	Weinheim, : Wiley-VCH, c2009
ISBN	9786612372292 9781282372290 1282372297 9783527628049 3527628045 9783527628056 3527628053
Descrizione fisica	1 online resource (259 p.)
Altri autori (Persone)	EpsteinRichard I Sheik-BahaeMansoor
Disciplina	530.41
Soggetti	Laser manipulation (Nuclear physics) Laser cooling
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Optical Refrigeration; Contents; Preface; 1 Optical Refrigeration in Solids: Fundamentals and Overview; 1.1 Basic Concepts; 1.2 The Four-Level Model for Optical Refrigeration; 1.3 Cooling Rare-Earth-Doped

Solids; 1.4 Prospects for Laser Cooling in Semiconductors; 1.5 Experimental Work on Optical Refrigeration in Semiconductors; 1.6 Future Outlook; References; 2 Design and Fabrication of Rare-Earth-Doped Laser Cooling Materials; 2.1 History of Laser Cooling Materials; 2.2 Material Design Considerations; 2.2.1 Active Ions; 2.2.1.1 Rare-Earth Ions for Laser Cooling; 2.2.1.2 Active Ion Concentration; 2.2.2 Host Materials; 2.2.2.1 Multiphonon Relaxation; 2.2.2.2 Chemical Durability; 2.2.2.3 Thermal and Thermomechanical Properties; 2.2.2.4 Refractive Index; 2.2.3 Material Purity; 2.2.3.1 Vibrational Impurities; 2.2.3.2 Metal-Ion Impurities; 2.3 Preparation of High-Purity Precursors; 2.3.1 Strategies for Preparing High-Purity Precursors; 2.3.2 Process Conditions; 2.3.2.1 Purity of Commercial Precursors; 2.3.2.2 Process Equipment; 2.3.2.3 Clean Environment; 2.3.3 Material Purification; 2.3.3.1 Filtration and Recrystallization; 2.3.3.2 Solvent Extraction Using Chelating Agents; 2.3.3.3 Fluorination and Drying in Hydrogen Fluoride Gas; 2.3.3.4 Sublimation and Distillation; 2.3.3.5 Electrochemical Purification; 2.3.4 Determination of Trace Impurity Levels; 2.4 Glass Fabrication; 2.4.1 Glass Formation in ZrF₄ Systems; 2.4.2 ZBLAN Glass Fabrication; 2.4.2.1 Melting of the Starting Materials; 2.4.2.2 Evaporative Losses; 2.4.2.3 Dissolution and Homogenization; 2.4.2.4 Optimum Rate of Cooling; 2.4.2.5 Viscosity for Casting; 2.4.2.6 Typical Glass Fabrication Parameters; 2.4.3 Fluoride, Chloride, and Sulfide Glass Fabrication; 2.5 Halide Crystal Growth; 2.6 Promising Future Materials; 2.6.1 Simplified Fluoride Glasses; 2.6.2 Fluoride Crystals; 2.6.3 Chloride and Bromide Crystals; References; 3 Laser Cooling in Fluoride Single Crystals; 3.1 Introduction; 3.2 Physical Properties; 3.3 Experimental; 3.3.1 Growth Apparatus; 3.3.2 Spectroscopic Setup; 3.3.3 Cooling Setup; 3.4 Spectroscopic Analysis; 3.5 Cooling Results; 3.5.1 Cooling Potential; 3.5.2 Bulk Cooling; 3.6 Conclusion; References; 4 Er(3+)-Doped Materials for Solid-State Cooling; 4.1 Low Phonon Energy Materials; 4.1.1 KPb₂Cl₅ Crystal; 4.1.2 Fluorochloride Glasses; 4.2 Internal Cooling Measurements; 4.3 Bulk Cooling Measurements; 4.4 Influence of Upconversion Processes on the Cooling Efficiency of Er(3+); 4.4.1 Spectroscopic Grounds: Upconversion Properties of Er(3+) Under Pumping in the (4)I_{9/2} Manifold; 4.4.2 A Phenomenological Cooling Model Including Upconversion; References; 5 Laser Refrigerator Design and Applications; 5.1 Introduction; 5.2 Modeling; 5.3 Modeling Results; 5.4 Design Issues; 5.5 Mirror Heating; 5.6 Applications; 5.6.1 Comparison to Other Refrigeration Technologies

Sommario/riassunto

Edited by the two top experts in the field with a panel of International contributors, this is a comprehensive up-to-date review of research and applications. Starting with the basic physical principles of laser cooling of solids, the monograph goes on to discuss the current theoretical issues being resolved and the increasing demands of growth and evaluation of high purity materials suitable for optical refrigeration, while also examining the design and applications of practical cryocoolers. An advanced text for scientists, researchers, engineers, and students (masters, PHDs and Postdoc
