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Nota di contenuto	Frontmatter -- Contents -- 1 Introduction / Henrot, Antoine -- 2 Existence results / Bucur, Dorin -- 3 Regularity of optimal spectral domains / Lamboley, Jimmy / Pierre, Michel -- 4 The Robin problem / Bucur, Dorin / Freitas, Pedro / Kennedy, James -- 5 Spectral geometry of the Steklov problem / Girouard, Alexandre / Polterovich, Iosif -- 6 Triangles and Other Special Domains / Laugesen, Richard S. / Siudeja, Bartomiej A. -- 7 Spectral inequalities in quantitative form / Brasco, Lorenzo / De Philippis, Guido -- 8 Universal Inequalities for the Eigenvalues of the Dirichlet Laplacian / Ashbaugh, Mark S. -- 9 Spectral optimization problems for Schrödinger operators / Buttazzo, Giuseppe / Velichkov, Bozhidar -- 10 Nodal and spectral minimal partitions - The state of the art in 2016 - / Bonnaillie-Noël, Virginie / Helffer, Bernard -- 11 Numerical results for extremal problem for eigenvalues of the Laplacian / Antunes, Pedro R. S. / Oudet, Edouard -- Bibliography -- Index
Sommario/riassunto	"Shape optimization and spectral theory" is a survey book aiming to give an overview of recent results in spectral geometry and its links with shape optimization. It covers most of the issues which are important for people working in PDE and differential geometry interested in sharp inequalities and qualitative behaviour for eigenvalues of the Laplacian with different kind of boundary conditions (Dirichlet, Robin and Steklov). This includes: existence of optimal

shapes, their regularity, the case of special domains like triangles, isospectrality, quantitative form of the isoperimetric inequalities, optimal partitions, universal inequalities and numerical results. Much progress has been made in these extremum problems during the last ten years and this edited volume presents a valuable update to a wide community interested in these topics. List of contributors Antunes Pedro R.S., Ashbaugh Mark, Bonnaille-Noël Virginie, Brasco Lorenzo, Bucur Dorin, Buttazzo Giuseppe, De Philippis Guido, Freitas Pedro, Girouard Alexandre, Helffer Bernard, Kennedy James, Lamboley Jimmy, Laugesen Richard S., Oudet Edouard, Pierre Michel, Polterovich Iosif, Siudeja Bartomiej A., Velichkov Bozhidar
