

## Publications of Habib Ammari

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### Monographs

1. H. Ammari, B. Fitzpatrick, H. Kang, M. Ruiz, S. Yu, and H. Zhang, Mathematical and Computational Methods in Photonics and Phononics. *Mathematical Surveys and Monographs*, Volume 235, American Mathematical Society, Providence, 2018, 509 pages.
2. H. Ammari, J. Garnier, H. Kang, L. Nguyen, and L. Seppecher, Mathematics of Super-resolution Biomedical Imaging. *Modelling and Simulation in Medical Imaging*, Volume 2, Imperial College Press, London, 2016, 687 pages.
3. H. Ammari, E. Bretin, J. Garnier, H. Kang, H. Lee, and A. Wahab, Mathematical Methods in Elasticity Imaging. *Princeton Series in Applied Mathematics*, Princeton University Press, 2015, 230 pages.
4. H. Ammari, J. Garnier, W. Jing, H. Kang, M. Lim, K. Sølna, and H. Wang, Mathematical and Statistical Methods for Multistatic Imaging. *Lecture Notes in Mathematics*, Volume 2098, Springer-Verlag, Berlin, 2013, 361 pages.
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7. H. Ammari and H. Kang, Polarization and Moment Tensors: with Applications to Inverse Problems and Effective Medium Theory. *Applied Mathematical Sciences Series*, Volume 162, Springer-Verlag, New York, 2007, 312 pages.
8. H. Ammari and H. Kang, Reconstruction of Small Inhomogeneities from Boundary Measurements, *Lecture Notes in Mathematics*, Volume 1846, Springer-Verlag, Berlin 2004, 238 pages.

### Edited books

1. H. Ammari, Y. Capdeboscq, H. Kang, and I. Sim, Imaging, Multi-Scale and High Contrast PDE. *Contemporary Mathematics*, Volume 660, American Mathematical Society, Providence, 2016.
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4. H. Ammari, Mathematical Modeling in Biomedical Imaging II: Optical, Ultrasound, and Opto-Acoustic Tomographies. *Lecture Notes in Mathematics: Mathematical Biosciences Subseries*, Volume 2035, Springer-Verlag, Berlin, 2011.
5. H. Ammari, J. Garnier, H. Kang, and K. Sølna, Mathematical and Statistical Methods for Imaging. *Contemporary Mathematics*, Volume 548, American Mathematical Society, Providence, 2011.
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7. H. Ammari, Mathematical Modeling in Biomedical Imaging I: Electrical and Ultrasound Tomographies, Anomaly Detection, and Brain Imaging. *Lecture Notes in Mathematics: Mathematical Biosciences Subseries*, Volume 1983, Springer-Verlag, Berlin, 2009.
8. H. Ammari, Mathematical methods for imaging and inverse problems. Proceedings of the seminar held in Paris, 2007–2008. *ESAIM Proceedings*, 26. EDP Sciences, Les Ulis, 2009.
9. H. Ammari, Modeling and Computations in Electromagnetics: A Volume Dedicated to Jean-Claude Nédélec. *Lecture Notes in Computational Science and Engineering*, Volume 59, Springer-Verlag, Berlin 2007.
10. H. Ammari, H. Kang, Inverse Problems, Multi-Scale Analysis, and Homogenization. *Contemporary Mathematics*, Volume 408, American Mathematical Society, Providence, 2006.

### **Papers in peer-reviewed journals**

1. H. Ammari, E.O. Hiltunen, and S. Yu, Subwavelength guided modes for acoustic waves in bubbly crystals with a line defect. To appear in *Journal of the European Mathematical Society*.
2. H. Ammari, E. Orved Hiltunen and S. Yu, A high-frequency homogenization approach near the Dirac points in bubbly honeycomb crystals. *Archive on Rational Mechanics and Analysis*, 238 (2020) 1559-1583.
3. H. Ammari, B. Fitzpatrick, E. Orved Hiltunen, H. Lee, and S. Yu, Honeycomb-lattice Minnaert bubbles. *SIAM Journal on Mathematical Analysis*, 52 (2020), no. 6, 54415466.
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5. H. Ammari, E. Bretin, P. Millien, and L. Seppecher, A direct linear inversion for discontinuous elastic parameters recovery from internal displacement information only. *Numerische Mathematik*, 147 (2021), no. 1, 189-226.
6. H. Ammari, B. Davies, E.O. Hiltunen, and S. Yu, Topologically protected edge modes in one-dimensional chains of subwavelength resonators. *Journal de Mathématiques Pures et Appliquées*, 144 (2020), 17-49.

7. S. Yu and H. Ammari, Hybridization of singular plasmons via transformation optics. *Proceedings of the National Academy of Sciences of the United States of America*, 116 (2019), 13785-13790.
8. H. Ammari, B. Davies and S. Yu, Close-to-touching acoustic subwavelength resonators: eigenfrequency separation and gradient blow-up. *SIAM Journal on Multiscale Modeling and Simulation*, 18 (2020), no. 3, 12991317.
9. H. Ammari and B. Davies, Modelling the active cochlea as a fully-coupled system of sub-wavelength Hopf resonators. *Proceedings of the Royal Society A*, A, 476 (2020), 20190870.
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15. Y. Liu, W. Ren, and H. Ammari, Robust reconstruction of fluorescence molecular tomography with an optimized illumination pattern. *Inverse Problems and Imaging*, 14 (2020), 535-568.
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20. G. Alberti, H. Ammari, F. Romero, and T. Wintz, Dynamic Spike Super-resolution and Applications to Ultrafast Ultrasound Imaging. *SIAM Journal on Imaging Sciences*, 12 (2019), no. 3, 1501-1527.
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