Publications

1. The algebraic K-theory Novikov conjecture for group algebras over the ring of Schatten class operators, Advances in Mathematics, 307 (2017) 727–753.
2. (with Z. Xie) Higher rho invariants and the moduli spaces of positive scalar curvature metrics, Advances in Mathematics, 307 (2017) 1046–1069.
3. (with E. Guentner and R. Willett) Dynamic asymptotic dimension and controlled operator K-theory, 81 pages, arxiv, 2016.
4. (with S. Weinberger and Z. Xie) Additivity of higher rho invariants and nonrigidity of topological manifolds, 84 pages, arxiv, 2016.
5. (with R. Douglas and X. Tang) An analytic Grothendick-Rieman-Roch theorem, Advances in Mathematics, 294 (2016) 307–331.
6. (with E. Guentner and R. Willett) Dynamic Asymptotic Dimension: relation to dynamics, topology, coarse geometry, and C*-algebras, Mathematische Annalen, published online, 1-45, 2016.
7. (with H. Oyono-Oyono) Quantitative operator K-theory and the Kunneth formula, 66 pages, arxiv, 2016.
8. (with Oyono-Oyono) Persistence approximation property and controlled operator K-theory, to appear in Münster Journal of Mathematics.
9. (with S. Chang and S. Weinberger) Positive scalar curvature and a new index theory for noncompact manifolds, arxiv, 2015.
10. (with S. Chang and S. Weinberger) Contractible manifolds with exotic positive scalar curvature behaviour, to appear in Contemporary Mathematics.
11. (with Z. Xie) Noncommutative geometry of discrete groups, Introduction to Modern Mathematics, Series: Advanced Lectures in Mathematics, No: 33, (2015) 441–443.
12. (with S. Weinberger) Finite part of operator K-theory for groups finitely embeddable into Hilbert space and the degree of nonrigidity of manifolds, Geometry and Topology, 19 (2015) 2507-2540.

13. (with X. Chen and Q. Wang) The coarse Novikov conjecture and Banach spaces with Property (H), Journal of Functional Analysis, Vol. 268, 9 (2015) 2754–2786.

14. (with H. Oyono-Oyono) On a quantitative Baum-Connes conjecture, Annales de l'Institut Fourier, 65, 2 (2015) 605–674.

15. (with D. Ramras and R. Tessera) Finite decomposition complexity and the integral Novikov conjecture for higher algebraic K-theory, Journal für die Reine und Angewandte Mathematik (Crelle), 694 (2014), 129–178.

16. (with Z. Xie) Positive scalar curvature, higher rho invariants and localization algebras, Advances in Mathematics, 262 (2014) 823–866.

17. (with R. Willett) Geometric property (T), Chinese Annals of Mathematics, Ser. B 35 (2014), no. 5, 761–800.

18. (with Z. Xie) A relative higher index theorem, positive scalar curvature, and diffeomorphisms, Advances in Mathematics, 250 (2014) 35–73.

19. (with X. Chen and Q. Wang) The maximal coarse Baum-Connes conjecture for spaces which admit a fibred coarse embedding into Hilbert space, Advances in Mathematics, 249 (2013) 88–130.

20. (with D. Ramras and R. Willett) A finite dimensional approach to the Novikov conjecture, Algebraic and Geometric Topology, 13 (2013) 2283–2316.

21. (with E. Guentner and R. Tessera) Discrete groups with finite decomposition complexity, Groups, Geometry and Dynamics, Vol. 7, 2 (2013) 377–402.

22. (with G. Kasparov) The Novikov conjecture and geometry of Banach space, Geometry and Topology, 16 (2012) 1859–1880.

23. (with R. Willett) Higher index theory for certain expanders and Gromov's monster groups I, Advances in Mathematics, 229 (2012) 1380–1416.

24. (with R. Willett) Higher index theory for certain expanders and Gromov's monster groups II, Advances in Mathematics, 229 (2012) 1762–1803.

25. (with E. Guentner and R. Tessera) A notion of geometric complexity and its application to topological rigidity, Inventiones Mathematicae, Vol. 189, 2 (2012) 315–357.

26. Large scale geometry and its applications, Contemporary Mathematics, AMS, Vol. 546, 2011, 305–315.

27. (with E. Guentner and R. Tessera) Operator norm localization for linear groups and its applications to K-theory, Advances in Mathematics, Vol. 226, 4 (2011), 3495–3510.

28. (with S. Chang and S. Weinberger) Taming 3-manifolds using scalar curvature, Geometriae Dedicata, Vol. 148, 1 (2010), 3-14.

29. A characterization of the image of the Baum-Connes map, Clay Mathematics Proceedings, Vol. 11, 2010, 649–657.

30. (with H. Oyono-Oyono) K-theory for a certain expanders, Journal of Functional Analysis, Vol. 257, 10 (2009), 3239–3292.

31. (with X. Chen, R. Tessera and X. Wang) Metric sparsification and operator norm localization property, Advances in Mathematics, 218 (2008), no. 5, 1496–1511.

32. (with P. Nowak) What is Property A? Notices of AMS, Volume 55, Issue 4, 2008.

33. (with G. Gong and Q. Wang) Geometrization of the strong Novikov conjecture for residually finite groups. J. Reine Ang. Math. 621 (2008), 159–189.

34. (with S. Chang and S. Ferry) Bounded rigidity of manifolds and asymptotic dimension growth. Journal of K-theory, 1 (2008), no. 1, 129–144.

35. Higher index theory of elliptic operators and geometry of groups. Proceedings of International Congress of Mathematicians, Madrid, Vol. 2, 1623–1639, 2006.

36. (with G. Kasparov) The coarse geometric Novikov conjecture and uniform convexity. Advances in Mathematics, Vol. 206, 1(2006) 1–56.

37. Hyperbolic groups admit proper affine isometric action on l^p-spaces. Geometric and Functional Analysis, Vol. 15, 5 (2005) 1114–1151.

38. (with X. Chen, M. Dardalat and E. Guentner) Uniform embedding into Hilbert space and exactness of free product of groups. Journal of Functional Analysis, Vol. 205, 1(2003) 168–179.

39. (with G. Skandalis and J.-L. Tu) The coarse Baum-Connes conjecture and groupoids. Topology, Vol. 41, (2002) 807–834.

40. (with I. Mineyev) The Baum-Connes conjecture for hyperbolic groups, Inventiones Mathematicae. Vol. 149, (2002) 97–122.

41. (with A. Dranishnikov, G. Gong and V. Lafforgue) Uniform embeddings into Hilbert space and a question of Gromov. Bulletin of Canadian Math. Society, Vol. 45, 1 (2002) 60–70.

42. (with G. Gong) Volume growth and positive scalar curvature. Geometric and Functional Analysis, Vol. 10, 4 (2000) 821–828.

43. The coarse Baum-Connes conjecture for spaces which admit a uniform embedding into Hilbert space. Inventiones Mathematicae, Vol. 139, 1 (2000) 201–240.

44. (with J. Kaminker) Boundary amenability and positive scalar curvature. K-Theory, Vol. 18, (1999) 93–97.

45. The Novikov conjecture for groups with finite asymptotic dimension. Annals of Mathematics, Vol. 147, 2 (1998) 325–355.

46. Asymptotic Fredholm modules, vector bundles with small variation and a non-vanishing theorem for K-theoretic indices. K-Theory, Vol. 13, 4 (1998) 331–346.

47. Localization algebras and the coarse Baum-Connes conjecture. K-Theory, Vol. 11, 4 (1997) 307–318.

48. Zero-in-the-spectrum conjecture, positive scalar curvature and asymptotic dimension. Inventiones Mathematicae, 127 (1997) 99–126.

49. K-theoretic indices of Dirac type operators on complete manifolds and the Roe algebra. K-Theory, Vol. 11, 1 (1997) 1–15.

50. Cyclic cohomology and higher indices for noncompact complete Riemannian manifolds. Journal of Functional Analysis, 133 (1995) 442–473.

51. (with R. Douglas, J. Glazebrook, and T. Kamber) Index formulas for geometric Dirac operators in Riemannian foliations. K-Theory, Vol. 9, 5 (1995) 407–441.

52. Baum-Connes conjecture and coarse geometry. K-Theory, Vol. 9, 3 (1995) 223–231.

53. Coarse Baum-Connes conjecture. K-Theory, Vol. 9, 3 (1995) 199-221.

54. (with N. Higson and J. Roe) A coarse Mayer-Vietoris sequence. Math. Proc. Camb. Phil. Soc. 114, 85 (1993) 85-97.

55. Cyclic cohomology and index theory of transversally elliptic operators. Contemp. Math. 120. 1991.

56. Reducibility of a class of operators and their complete unitary invariants. Dongbei Shuxue, 3, 4 (1987) 410-418.

Book

(With Piotr Nowak) Large Scale Geometry, European Mathematical Society Publishing House, 2012.