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## Research Interests

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Broadly, my area of research is Functional analysis. My research interests are mainly in the theory of operator algebras, specially focusing on the theory of completely positive maps, completely bounded maps, quantum dynamical semigroups,  $E_0$ -semigroups, product systems, dilations, representations of  $C^*$ -algebras and Hilbert  $C^*$ -modules. I also have research interests in the theory of quantum information.

## Research Experience

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- Junior research fellow at the Indian Statistical Institute Bangalore Centre, India from July 2008 - July 2010.
- Senior research fellow at the Indian Statistical Institute Bangalore Centre, India from July 2010 - April 2014.
- Postdoctoral fellow at the Institute of Mathematical Sciences (IMSc) Chennai, India from June 2014 - July 2016.
- Assistant Professor at the Indian Institute of Technology Madras, Chennai, India since August 01, 2016.

## Education

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*Ph. D, 2008-2014*

- Institute: Indian Statistical Institute Bangalore Centre
- Supervisor: Prof. B. V. Rajarama Bhat
- Title of the Ph.D thesis: Bures Distance For Completely Positive Maps and CP-H-Extendable Maps Between Hilbert  $C^*$ -modules

*M.Sc. Mathematics, 2005-2007*

- Institute: University of Calicut, Kerala, India

*B.Sc. Mathematics, 2002-2005*

- Institute: Sullamussalam Science College (affiliated to University of Calicut), Kerala, India

## Fellowships / Grants

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- M.Sc scholarship of the NBHM for the academic year 2005-07.
- Junior research fellowship of the Indian Statistical Institute, 2008.
- NBHM Postdoctoral fellowship, 2014.
- Postdoctoral fellowship of The Institute of Mathematical Sciences (IMSc) Chennai, 2014.
- Travel Grant provided by the Association of Infinite Dimensional Analysis and Quantum Probability to attend the 37<sup>th</sup> International Conference on Quantum Probability and Related Topics (QP37), Malaysia, 2016.

## Research Publications

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- *On a generalization of Ando's dilation theorem*, Preprint. (Jointly with Nirupama Mallick)
- *Regular representations of completely bounded maps*, Pacific Journal of Mathematics, Vol. 289 (2017), No. 2, 257 - 286. (Jointly with B.V. Rajarama Bhat and Nirupama Mallick.)
- *On a tensor-analogue of the Schur product*, Positivity, Volume 20, September 2016, Issue 3, pp 621 - 624. (Jointly with V. S. Sunder.)
- *CP-H-Extendable Maps between Hilbert modules and CPH-Semigroups*, Journal of Mathematical Analysis and Applications, Vol. 414, No. 2 (2014), 886 - 913. (Jointly with Michael Skeide.)
- *Bures Distance For Completely Positive Maps*, Infinite Dimensional Analysis, Quantum Probability and Related Topics, Vol. 16, No. 4 (2013), 1350031 (22 pages). (Jointly with B. V. Rajarama Bhat.)
- *Stinespring's theorem for maps on Hilbert  $C^*$ -modules*, Journal of Operator Theory 68 (2012), No.1, 173-178. (Jointly with B. V. Rajarama Bhat and G. Ramesh.)

## Conference Talks

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- On a generalization of Ando's dilation theorem, Recent Advances in Operator Theory and Operator Algebras, ISI Bangalore, December 13-19, 2018.
- A generalization of Ando's dilation, SHK Fest- Workshop and Conference on Analysis and Applications, IIT Madras, June 18 - 22, 2018.
- Regular representations of completely bounded maps, Conference on Functional Analysis, IIT Bombay, India, October 12 - 15, 2017.
- Regular representations of completely bounded maps, 37th International Conference on Quantum Probability and Related Topics, International Islamic University Malaysia, August 22 - 26, 2016.
- Bures Distance For Completely Positive Maps, Recent Advances in Operator Theory and Operator Algebras, Indian Statistical Institute Bangalore, India, December 31, 2012 - January 11, 2013.

## Invited Talks

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- Complex Analysis, Training Programme in Mathematics (TPM), NISER Bhubaneswar, June 04-16, 2018.
- Functional Analysis (1 week), Annual Foundation School (AFS)-II, KSOM Kozhikode, June 06 - July 01, 2016.
- Spectral theorem for normal matrices (operators), National Seminar on Spectral theory, BJM Govt College, Chavara, Kerala, India, January 28, 2015.
- Spectral theorem for normal matrices (operators), National Seminar on Analysis and PDE, PTM Govt College, Perinthalmanna, Kerala, India, September 29-30, 2014.

## Conferences / Workshops Attended

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- Mathematics Training and Talent Search Programme, UICT, Mumbai, India, May 15- June 10, 2006.
- Annual Conference of the Ramanujan Mathematical Society, Indian Statistical Institute Bangalore Centre, India, May 11-13, 2009.
- Workshop on Analysis and its Applications, Indian Institute of Science, Bangalore, India, May 14-23, 2009.
- International Conference on Analysis and its Applications, Indian Institute of Science, Bangalore, India, May 25- 27, 2009.
- Workshop on Geometry of Banach Spaces, Indian Statistical Institute Bangalore Centre, India, June 01-13, 2009.
- Instructional Workshop on Spectral Theorem, Kerala School of Mathematics, Kozhikode, India, June 15-16, 2009.
- ATM Workshop on Operator Theory, Institute of Mathematics and Application, Bhubaneswar, India, December 07-12, 2009.

- Workshop on Functional Analysis and Harmonic Analysis, Kerala School of Mathematics, Kozhikode, India, February 01-10, 2010.
- National Seminar on Functional Analysis, University of Calicut, Kerala, India, February 26-27, 2010.
- Instructional Workshop on Free Probability, Institute of Mathematical Sciences, Chennai, India, July 26 -August 6, 2010.
- Satellite Conference on Operator Algebras, Institute of Mathematical Sciences, Chennai, India, August 9 -13, 2010.
- International Conference on Quantum Probability and Related Topics, Indian Statistical Institute Bangalore Centre, India, August 14 -17, 2010.
- International Congress of Mathematics, Hyderabad, India, August 19 -27, 2010.
- Conference on Analysis, Indian Statistical Institute Delhi Centre, India, December 23- 25, 2011.
- Functional Analysis of Quantum Information Theory, Institute of Mathematical Sciences, Chennai, India, December 26, 2011- January 06, 2012.
- Sunder Fest, Institute of Mathematical Sciences, Chennai, India, April 04- 06, 2012.
- International Conference on Operator Algebras in Non-equilibrium Statistical Mechanics, Goa University, Goa, India, December 17-21, 2012.
- Matrices and Operators: Conference in honour of sixtieth birthday of Professor Rajendra Bhatia, Indian Institute of Science, Bangalore, India, December 27- 30, 2012.
- Recent Advances in Operator Theory and Operator Algebras, Indian Statistical Institute Bangalore Centre, India, December 31, 2012 - January 11, 2013.
- Focus Program on Noncommutative Distributions in Free Probability Theory, The Fields Institute For Research in Mathematical Sciences, Toronto, Canada, July 02-26, 2013.
- IWOTA 2013, Indian Institute of Science, Bangalore, India, December 16-20, 2013.
- Operator & Spectral theory, Operator algebras, Non-commutative Geometry & Probability: Workshop and Conference in honour of K.B. Sinha-70<sup>th</sup> Birthday, Kerala School of Mathematics, Kozhikode, India, February 07-14, 2014.
- Master-Class in Modular Theory of von Neumann algebras, Institute of Mathematical Sciences, Chennai, India, November 24-December 05, 2014.
- Recent Advances in Operator Theory and Operator Algebras, Indian Statistical Institute Bangalore Centre, India, December 09-19, 2014.
- Advances in Noncommutative Mathematics, Indian Statistical Institute Bangalore Centre, India, January 18-22, 2016.
- Advanced Instructional School on Operator Theory/Algebras, Institute of Mathematical Sciences, Chennai, India, February 1-21, 2016.
- 37th International Conference on Quantum Probability and Related Topics, International Islamic University Malaysia, August 22 - 26, 2016.
- TSSRK Fest, A Celebration of T. S. S. R. K. Rao's 60th Birthday, Indian Statistical Institute Bangalore Centre, September 22-24, 2016.
- Recent advances in Operator Theory and Operator Algebras- 2016 (OTOA-2016), Indian Statistical Institute Bangalore Centre, India, December 13 - 22, 2016.
- Advances in Noncommutative Mathematics, Indian Statistical Institute Bangalore Centre, India, January 11-13, 2017.
- Quantum Probability: Past, Present and Future, Indian Statistical Institute Bangalore Centre, India, August 10-12, 2017.
- Conference on Functional Analysis, IIT Bombay, India, October 12 - 15, 2017.
- International Workshop on Recent Advances in Operator Semigroups, University of Delhi, Delhi, December 18 - 21, 2017.
- SHK Fest- Workshop and Conference on Analysis and Applications, IIT Madras, June 18 - 22, 2018.
- Recent Advances in Operator Theory and Operator Algebras, ISI Bangalore, December 13-19, 2018.

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<sup>1</sup>Last updated: January 7, 2019