

Curriculum Vitae

REZA KAHKESHANI

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CONTACT

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EDUCATION

2006 Sep.-2011 July, **Ph.D. in Mathematics**,
Tarbiat Modares University, Tehran, Iran
Thesis: *Construction of Designs and Codes Using Group Action*
Supervisors: Prof. Ali Iranmanesh, Prof. Mohammad R. Darafsheh
2001 Sep.-2004 Feb., **M.Sc. in Pure Mathematics**,
University of Tehran, Tehran, Iran
Thesis: *Minimal Free Resolution of Stanley-Reisner Rings*
Supervisor: Prof. Rahim Zaare-Nahandi
1996 Sep.-2001 Aug., **B.Sc. in Pure Mathematics**,
Sharif University of Technology, Tehran, Iran

POSITIONS

2012 fall-present, **Assistant Professor**
at University of Kashan, Kashan, Iran

2011 fall-2012 spr., **Lecturer**
 at University of Qom, Qom, Iran

2011 win.-2012 spr. **Lecturer**
 at University of Kashan, Kashan, Iran

2010 Feb.-Aug., **Research Visitor**
 at RWTH Aachen University, Aachen, Germany

2006 sum. & fall, **Lecturer**
 at Islamic Azad University of Kashan, Kashan, Iran

2005 fall, **Lecturer**
 at University of Payame Noor Kashan, Kashan, Iran

2003 fall, **Lecturer**
 at Islamic Azad University of Kashan, Kashan, Iran

2002 fall, **Teaching Assistant**
 of Prof. Rahim Zaare-Nahandi

TEACHING

2018 win., *Coding Theory I* (Graduate Level),
Calculus I, Combinatorics and its Applications
 at **University of Kashan**, Kashan, Iran

2017 fall, *Information Theory* (Graduate Level),
Calculus I
 at **University of Kashan**, Kashan, Iran

2017 win., *Fundamental of Combinatorics*,
Fundamental of Logic and Set Theory, Fundamental of Probability
 at **University of Kashan**, Kashan, Iran

2016 fall, *The Theory of Codes and Ciphers* (Graduate Level),
Calculus I, Fundamental of Combinatorics
 at **University of Kashan**, Kashan, Iran

2016 win., *Coding Theory* (Graduate Level),
Calculus II, Fundamental of Logic and Set Theory
 at **University of Kashan**, Kashan, Iran

2015 fall, *Permutation Groups* (Graduate Level),
Calculus I, Fundamental of Combinatorics, Probability I
 at **University of Kashan**, Kashan, Iran

2015 win., *Information Theory* (Graduate Level),
Differential Equations, Fundamental of Combinatorics,
Fundamental of Logic and Set Theory
 at **University of Kashan**, Kashan, Iran

2014 fall, *Combinatorial Analysis I* (Graduate Level),
Calculus I, Fundamental of Combinatorics,
 at **University of Kashan**, Kashan, Iran

2014 win., *Information Theory* (Graduate Level),
Calculus II, Fundamental of Mathematics,
 at **University of Kashan**, Kashan, Iran

2013 fall, *Coding Theory* (Graduate Level),
Calculus I, Fundamental of Logic, History of Mathematics,
 at **University of Kashan**, Kashan, Iran

2013 win.,	<i>Calculus II, Combinatorics and its Applications, Differential Equations, Elementary Algebraic Geometry, Fundamental of Logic and Set Theory</i> at University of Kashan , Kashan, Iran
2012 fall,	<i>Calculus I, Fundamental of Combinatorics, Fundamental of Mathematics,</i> at University of Kashan , Kashan, Iran
2012 win.,	<i>Calculus III, Fundamental of Combinatorics, Graph Theory, Linear Algebra</i> at University of Qom , Qom, Iran
2012 win.,	<i>Elementary Algebraic Geometry, Fundamental of Combinatorics, Fundamental of Logic and Set Theory</i> at University of Kashan , Kashan, Iran
2011 fall,	<i>Algebra III, Calculus I</i> at University of Qom , Qom, Iran
2011 win.,	<i>Discrete Mathematics, Fundamental of Combinatorics</i> at University of Kashan , Kashan, Iran
2006 fall,	<i>Calculus I and Elementary Statistic, Preuniversity Mathematics</i> at Islamic Azad University of Kashan , Kashan, Iran
2006 sum.,	<i>Calculus I and Elementary Statistic, Preuniversity Mathematics</i> at Islamic Azad University of Kashan , Kashan, Iran
2005 fall,	<i>Mathematical Analysis I, Discrete Structures, Calculus II</i> at University of Payame Noor Kashan , Kashan, Iran
2003 fall,	<i>Engineering Mathematics, Calculus II, Preuniversity Mathematics</i> at Islamic Azad University of Kashan , Kashan, Iran
2002 fall,	<i>Linear Algebra,</i> Teaching Assistant at University of Tehran

PUBLICATIONS IN JOURNALS

- **R. Kahkeshani**, Generalized MacWilliams Identity for λ -Ply Joint Weight Enumerators, submitted for publication.
- **R. Kahkeshani**, 1-Designs from the group $PSL_2(59)$ and their automorphism groups, accepted for publication in *Math. Interdiscip. Res.*.
- **R. Kahkeshani** and M. Arab, A Generalized Binet Formula That Counts the Tilings of a $(2 \times n)$ -Board, accepted for publication in *Integers*.
- **R. Kahkeshani**, The Tilings of a $(2 \times n)$ -Board and Some New Combinatorial Identities, *J. Integer Seq.* Vol. 20 (2017), Article 17.5.4.
- **R. Kahkeshani** and R. Kazemi, The translation of “X. Wang, Volumes of Generalized Unit Balls, *Math. Magazine*, Vol. 78, No. 5, 390-395 (2005)”, *Farhang va Andisheh-ye Riazi* 35, No. 2 (2017) [in Persian].
- M. Yazdani-Moghaddam and **R. Kahkeshani**, The remoteness of the permutation code U_{6n} , *Algebraic Structures and Their Applications*, Vol. 3, No. 2 (2016) 71-79.
- Zaghiyan, A. Majlesi, **R. Kahkeshani** and H. Shabani, Binary codes from the group $PSU_2(16)$, *U.P.B. Sci. Bull., Ser. A* Vol. 76, Iss. 3 (2014) 55-62.
- **R. Kahkeshani**, H. Shabani, A. Zaghiyan and A. Majlesi, The projective special unitary group $PSU_2(16)$ and their codes, *Electron. Notes Discrete Math.* 45 (2014), 177-180.

- H. Shabani and **R. Kahkeshani**, On the first Zagreb index of polygraphs, *Electron. Notes Discrete Math.* 45 (2014), 147-151.
- **R. Kahkeshani**, A Generalization of the Catalan Numbers, *J. Integer Seq.*, Vol. 16 (2013), Article 13.6.8.
- E. Lashani, A. Iranmanesh, **R. Kahkeshani** and O. Khormali, The graphs G that both G and $L(G)$ contain 1-perfect codes, *Int. Math. Forum*, Vol. 7, No. 43 (2012) 2099-2106.
- M. R. Darafsheh, A. Iranmanesh and **R. Kahkeshani**, Self-dual designs and their binary codes obtained from the group $PSL_2(13)$, *Creat. Math. Inform.* 18, No. 2 (2009) 172-181.
- M. R. Darafsheh, A. Iranmanesh and **R. Kahkeshani**, Designs from the groups $PSL_2(q)$ for certain q , *Quaest. Math.* 32 (2009), 297-306.
- M. R. Darafsheh, A. Iranmanesh and **R. Kahkeshani**, Some designs and codes invariant under the groups S_9 and A_8 , *Des. Code Cryptogr.* 51 (2009), 211-223.

PUBLICATIONS IN CONFERENCES

- **Chair of Organizing Committee**, 9th Iranian Group Theory Conference, University of Kashan, Kashan, Iran, February 1-3, 2017.
- **Co-Participant-Speaker** (with H. Shabani) *International Conference on Combinatorics, Cryptography and Computation*, Iran University of Science and Technology, Tehran, Iran, September 1-2, 2016.
- **Scientific Committee & Workshop Speaker**, The second Conference on *Computational Algebra, Computational Number Theory and Applications*, University of Kashan, Kashan, Iran, October 13-15, 2015.
- **Co-Participant-Speaker** (with N. Moghaddasi-Risse, G. H. Fath-Tabar) The Third Conference on *Algebra and its Applications*, University of Mohaghegh Ardabili, Ardabil, Iran, August 12-14, 2014.
- **Scientific Committee & Workshop Speaker**, The First Conference on *Computational Algebra, Computational Number Theory and Applications*, University of Kashan, Kashan, Iran, December 17-19, 2014.
- **Co-Participant-Speaker** (with N. Zarrin), *A Note on Channel Coding and Lossy Source Coding*, The Proceedings of the First Conference on Computational Group Theory, Computational Number Theory and Applications (2014), 177-181.
- **Co-Participant-Speaker** (with M. Yazdany Moghaddam) *A Note on the Capacity of some Gaussian channels*, The Proceedings of the First Conference on Computational Group Theory, Computational Number Theory and Applications (2014), 171-174.
- **Co-Participant-Speaker** (with M. A. Mohammad Ghasemi) *A Review on Extension Theorems for Linear Codes*, The Proceedings of the First Conference on Computational Group Theory, Computational Number Theory and Applications (2014), 143-144.

- **Co-Participant-Speaker** (with N. Moghaddasi-Risse, G. H. Fath-Tabar) *Codes from some classes of graphs and their line graphs*, Proceedings of the 23th Iranian Algebra Seminar, Khansar, November 21-22 (2013).
- **Participant-Speaker** (with H. Shabani) *On the Zagreb Index of Polygraphs*, Proceedings of the 6th Conference and Workshop on Mathematical Chemistry, (2013).
- **Participant-Speaker** (with M. R. Darafsheh, A. Iranmanesh) *Designs and codes from the group $PSL_2(2^n)$* , Proceedings of the 3rd Conference and Workshop on Group Theory, (2011) 89-90.
- **Participant-Speaker** (with M. R. Darafsheh, A. Iranmanesh) *Some designs and codes from the groups $PSL_2(q)$ for certain q* , Proceedings of IEEE Conference “Coding Theory Days in St. Petersburg”, (2008) 27-30.

BOOKS

- Translation of *R. Andersen, Set Theory and the Construction of Numbers, University of Wisconsin Publication (2009)* to Persian, In redaction.
- Translation of *V. Kac, P. Cheung, Quantum Calculus, springer-Verlag (2002)* to Persian, Sokhanvaran-University of Kashan Publication (2015).

M.SC. THESIS SUPERVISED

- S. S. Hezarkhani, *Capacity of the memoryless additive inverse Gaussian noise channel*, 2016 September.
- A. R. Sayyadi, *Constrained source-coding with side information*, 2015 September.
- N. Zarrin, *Channel coding and lossy source coding*, 2015 September.
- M. A. Mohammad Ghasemi, *Some generalized extension theorems for linear codes*, 2015 September.

RESEARCH INTERESTS

Enumerative Combinatorics,
 Design Theory, Coding Theory, Information Theory and Cryptography
 Combinatorial Commutative Algebra
 Group Theory
 Quantum Calculus

LANGUAGES

Persian (Mother tongue)
 English
 Arabic (Basic)

REFERENCES

- **Prof. Mohammad R. Darafsheh**
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College of Science,
University of Tehran,
Tehran, Iran
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- **Prof. Ali Iranmanesh**
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Faculty of Mathematical Sciences,
Tarbiat Modares University,
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- **Prof. Rahim Zaare-Nahandi**
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