



## Reza Kahkeshani

Assistant Professor

College: Faculty of Mathematics

Department: Pure Mathematics

### Education

Degree	Graduated in	Major	University
BSc	2001	Pure Mathematics	Sharif University of Technology
MSc	2004	Pure Mathematics	University of Tehran
Ph.D	2011	Pure Mathematics	Tarbiat Modares University

### Employment Information

Faculty/Department	Position/Rank	Employment Type	Cooperation Type	Grade
University of Kashan	Faculty Member	Tenured	Full Time	11

### Subjects Taught

- Coding Theory
- Information Theory
- Combinatorics
- Permutation Groups
- Mathematical Logic
- History of Mathematics
- Philosophy of Mathematics

### Executions And Scientific Activities

- **Chair of Organizing Committee**, *9th Iranian Group Theory Conference*, University of Kashan, Kashan, Iran, February 1-3, 2017.

## Course Topics

- Coding Theory
- Information Theory
- Combinatorics
- Algebra
- Logic
- Calculus I & II
- Differential Equations
- Probability

## Workshops

- **Workshop Speaker**, *The second Conference on Computational Algebra, Computational Number Theory and Applications*, University of Kashan, Kashan, Iran, October 13-15, 2015.
- **Workshop Speaker**, *The First Conference on Computational Algebra, Computational Number Theory and Applications*, University of Kashan, Kashan, Iran, December 17-19, 2014.

## Conferences

- **Scientific Committee**, *The Fourth Conference on Computational Algebra, Computational Number Theory and Applications*, University of Kashan, Kashan, Iran, July 4-6, 2023.
- **Scientific Committee**, *51th Annual Iranian Mathematics Conference*, University of Kashan, Kashan, Iran, February 16-19, 2021.
- **Scientific Committee**, *The third Conference on Computational Algebra, Computational Number Theory and Applications*, University of Kashan, Kashan, Iran, December 12-14, 2018.
- **Chair of Organizing Committee**, *9th Iranian Group Theory Conference*, University of Kashan, Kashan, Iran, February 1-3, 2017.
- **Scientific Committee & Workshop Speaker**, *The second Conference on Computational Algebra, Computational Number Theory and Applications*, University of Kashan, Kashan, Iran, October 13-15, 2015.
- **Scientific Committee & Workshop Speaker**, *The First Conference on Computational Algebra, Computational Number Theory and Applications*, University of Kashan, Kashan, Iran, December 17-19, 2014.

## Journal Membership

- A member of editorial board of the journal "MathLab Journal" (<https://purkh.com/index.php/mathlab/about/editorialTeam>).

## Membership in Scientific Societies

- A member of **Iranian Mathematical Society** (2006-present).

## Papers in Conferences

- 
1. R. Kahkeshani , M. Yazdani , Moghaddam ,Permutation codes and their parameters ,9th Iranian Group Theory Conference ,1 2 2017, کاشان.

2. M. Alaeiyan , H. Kharazi , R. Kahkeshani , H. Shabani ,A Note on 1-Perfect Codes in Distance Balanced Graphs ,International Conference on Combinatorics, Cryptography and Computation ,2016, نور 19.
3. N. Zarrin ,& R. Kahkeshani ,A Note on Channel Coding and Lossy Source Coding ,The First Conference on Computational Group Theory, Computational Number Theory and Applications ,کاشان, 17 12 2014,.
4. R. Kahkeshani , M. Yazdani , Moghaddam ,A Note on the Capacity of some Gaussian Channels ,The First Conference on Computational Group Theory, Computational Number Theory and Applications ,کاشان, 17 12 2014,.
5. M. A. Mohammad Ghasemi ,& R. Kahkeshani ,A Review on Extension Theorems for Linear Codes ,The First Conference on Computational Group Theory, Computational Number Theory and Applications ,کاشان, 17 12 2014,.
6. Permutation decoding for binary codes from some regular graphs and designs ,The 3rd Seminar on Algebra and its Applications ,2014, اردبیل.
7. R. Kahkeshani , M. Yazdani , Moghaddam ,Support enumerators for some permutation groups ,The 6 th International Group Theory Conference , 12 3 2014, گرگان.
8. Codes from some classes of graphs and their line graphs ,the 23th Iranian Algebra Seminar ,خوانسار, 21 11 2013,.
9. R. Kahkeshani ,& H. Shabani ,On the Zagreb index of polygraphs ,The 6th Conference and Workshop on Mathematical Chemistry ,02-2013, بوشهر.
10. M. R. Darafsheh , A. Iranmanesh , R. Kahkeshani ,Designs and codes from the group  $PSL_2(2^n)$  ,The 3rd Conference and Workshop on Group Theory ,2011, تهران.
11. M. R. Darafsheh , A. Iranmanesh , R. Kahkeshani ,Codes whose automorphism groups are  $S_{11}$ ,  $PSL_2(11)$  or  $PSL_2(11):2$  ,IPM 20-Combinatorics ,2009, تهران.
12. M. R. Darafsheh , A. Iranmanesh , R. Kahkeshani ,Some designs and codes from the groups  $PSL_2(q)$  for certain  $q$  ,Coding Theory Days in St. Petersburg ,St. Petersburg ,2008.

## Papers in Journals

- 
1. رضا کهکشانی، دو برهان از آذرخور اشتاد گشنسپ، ریاضی و جامعه، شماره صفحات ۱-۲۴، ۵، ۲۰۲۴، ۰۸، ۰۶.
  2. رضا کهکشانی، Some Codes and Designs invariant under the groups  $S_7$  and  $S_8$ , Journal of Mahani Mathematical Research, Vol. 13, pp. 511, 2023 10 25, ISC.
  3. R. Kahkeshani, 1-Designs Constructed from the Groups  $PSL_2(81)$  and  $PSL_2(89)$ , Journal of Mahani Mathematical Research, 2022 01 22.
  4. M. R. Darafsheh, R. Kahkeshani, Ternary codes from primitive representations of the group  $PSL_2(9)$  and a new  $2-(15,7,36)$  design, Journal of the Indian Mathematical Society, 2022 01 01.
  5. R. Kahkeshani. On the generating function and minimum free distance for a class of convolutional codes. Karafan. ۲۰۲۱ ۰۹ ۰۳.
  6. R. Kahkeshani, Quaternary codes and a class of 2-designs invariant under the group  $A_8$ , Algebraic structures and their applications, 2021 08 22.
  7. R. Kahkeshani, On the Entropy Rate of a Random Walk on  $t$ -Designs, Mathematics Interdisciplinary Research, 2020 08 22.
  8. R. Kahkeshani, On some designs constructed from the groups  $PSL_2(q)$ ,  $q=53,61,64$ , Algebraic Structures and Their Applications, pp. 59-67, 2020 01 08.
  9. M. Yazdani , Moghaddam , R. Kahkeshani, On the Permutation Code of the Group  $V_{8n}$  and Its Parameters, Indian J. Math., Vol. 61, pp. 161-174, 2019 08 01.
  10. R. Kahkeshani, 1-Designs from the group  $PSL_2(59)$  and their automorphism groups, Math. Interdisc. Res., Vol. 3, pp. 147-158, 2018 03 29.
  11. R. Kahkeshani ,& M. Arab, A generalized Binet formula that counts the tilings of a  $(2 \times n)$ -board, INTEGERS, 2018.

12. R. Kahkeshani, The Tilings of a  $(2 \times n)$ -Board and Some New Combinatorial Identities, *Journal of Integer Sequences*, 2017.
13. Kahkeshani و R. Kazemi, (The translation of ``X. Wang, Volumes of Generalized Unit Balls, *Math. Magazine*, Vol. 78, No. 5, 390-395 (2005, 2017), فرهنگ و اندیشه ریاضی، 2017).
14. M. Yazdani , Moghaddam , R. Kahkeshani, The remoteness of the permutation code  $U_{6n}$ , *Algebraic Structures and Their Applications*, 2016.
15. A. Zaghiyan , A. Majlesi , R. Kahkeshani , H. Shabani, Binary codes from the group  $PSU_2(16)$ , *U. P. B. Sci. Bull. Ser. A*, 2014.
16. R. Kahkeshani , H. Shabani , A. Zaghiyan , A. Majlesi, The projective special unitary group  $PSU_2(16)$  and their codes, *Electronic Notes in Discrete Mathematics*, 2014 01 15.
17. H. Shabani , & R. Kahkeshani, On the first Zagreb index of polygraphs, *Electronic Notes in Discrete Mathematics*, 2014 01 15.
18. R. Kahkeshani, A Generalization of the Catalan Numbers, *Journal of Integer Sequences*, 2013.
19. E. Lashani , A. Iranmanesh , R. Kahkeshani , O. Khormali, The Graphs  $G$  that both  $G$  and  $L(G)$  contain 1-perfect codes, *Int. Math. Forum*, 2012.
20. R. Kahkeshani , R. Darafsheh , A. Iranmanesh, (Self-dual designs and their binary codes obtained from the group  $PSL_2(13)$ , *Creative Mathematics and Informatics*, 2009.
21. M. R. Darafsheh , A. Iranmanesh , R. Kahkeshani, Designs from the groups  $PSL_2(q)$  for certain  $q$ , *Quaestiones Mathematicae*, 2009-04.
22. رضا کهکشانی، دربارهٔ تابع مولد و فاصلهٔ آزاد کمینه برای رده‌ای از کدهای پیچشی، فصلنامه علمی ISC، کارافن، 1400/06/12.
23. رضا کهکشانی، لاله رحیمی پردنجانی، On a Class of Systematic IIR Convolutional Codes and its Properties, *The Journal of the Indian Mathematical Society*, Vol. 92, pp. 158, 2025 01 18, SCOPUS.
24. رضا کهکشانی، میثم عرب، A Generalized Binet Formula That Counts the Tilings of a  $(2 \times n)$ -board, *INTEGERS*, Vol. 18, pp. 1, 2018 11 23, SCOPUS.
25. علی زاغیان، احمد مجلسی، رضا کهکشانی، حسین شبانی قزآنی، Binary codes from the group  $PSU_2(16)$ , *U.P.B. Scientific Bulletin, Series A*, Vol. 76, pp. 55, 2014 08 15, SCOPUS ,JCR.
26. رضا کهکشانی، A Generalization of the Catalan Numbers, *Journal of Integer Sequences*, Vol. 16, pp. 1, 2013 07 30, SCOPUS.
27. رضا کهکشانی، A Generalization of the Catalan Numbers, *Journal of Integer Sequences*, Vol. 16, pp. 1, 2013 07 30, SCOPUS.
28. M. R. Darafsheh , A. Iranmanesh , R. Kahkeshani, Some designs and codes invariant under the groups  $S_9$  and  $A_8$ , *Designs, Codes and Cryptography*, 2009-05.