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List of Publications in Web of Science(JCR)

A. **Journal of Algebra**

1. G. K. Verma and **Abhay Kumar Singh**"On Function-Correcting Codes in the Lee Metric" **Journal of Algebra**, 712 ,776–803, (2027).

B. **IEEE Transactions on Information Theory**

1. G. K. Verma and **Abhay Kumar Singh** "Function-Correcting Codes for Linear and Locally Bounded Functions Over Z_2^s" **IEEE Transactions on Information Theory** DOI: 10.1109/TIT.2026.3755230, 2026
2. Anamika Singh and **Abhay Kumar Singh** "Function-Correcting Codes for Insertion-Deletion Channels" **IEEE Transactions on Information Theory**, DOI:10.1109/TIT.2026.3734129 2026.
3. G. K. Verma, A. Singh and **Abhay Kumar Singh** "Function-Correcting b-Symbol Codes for Locally $(,,b)$-Functions" **IEEE Transactions on Information Theory** vol. 72, no. 1, pp. 331-341, Jan. 2026, doi: 10.1109/TIT.2025.3633259.
4. Gyanendra K Verma, Nupur, and **Abhay Kumar Singh** Code Size Constraints in b-Symbol Read Channels: A Bound Analysis. **IEEE Transactions on Information Theory**, vol. 71, no. 12, pp. 9496-9505 (2025) DOI: 10.1109/TIT.2025.3622757.
5. H Q Dinh, B T Nguyen, **Abhay Kumar Singh**, and S Sriboonchitta. On the symbol-pair distance of repeated-root constacyclic codes of prime power lengths. **IEEE Transactions on Information Theory**, 64(4):24172430, 2018.

C. **IEEE Transactions on NanoBioscience**

1. Siddharth Bhoi **Abhay Kumar Singh**, and Kishan "Construction of Primers for DNA-Based Storage Systems" **IEEE Transactions on NanoBioscience**, DOI:10.1109/TNB.2026.3720321, 2026.

D. **IEEE Communications Letters**

1. H Q Dinh, **Abhay Kumar Singh**, N Kumar, and S Sriboonchitta. On constacyclic codes over $\mathbb{Z}_4[v]/\langle v^2 - v\rangle$ and their Gray images. **IEEE Communications Letters**, 22(9):1758-1761, 2018.
2. H Q Dinh, B T Nguyen, **Abhay Kumar Singh**, and S Sriboonchitta.Hamming and symbol-pair distances of repeated-root constacyclic codes of prime power lengths over $Fpm + uFpm$.**IEEE Communications Letters**, 22(9):1758-1761, 2018.
3. P Mishra, C Bhaya, A K Pal, and **Abhay Kumar Singh**. Compressed DNA Coding using Minimum Variance Human Tree. **IEEE Communications Letters**, 24(8):1602-1606, 2020.

E. **Theoretical Computer Science**

1. N Kumar, S S Bhoi, and **Abhay Kumar Singh**. A study of primer design with w-constacyclic shift over $\mathbb{F}_4$. **Theoretical Computer Science**. 960, 113925, 2023.
2. H Q Dinh, **Abhay Kumar Singh**, S. Pattanayak, and S Sriboonchitta. Construction of cyclic DNA codes over the ring $\mathbb{Z}_4[u]/\langle u^2-1\rangle$ based on the deletion distance. **Theoretical Computer Science(Elsevier)**, 773:27-42, 2019.

F. **Discrete Mathematics(Elsevier)**

1. Pratyush Kumar, Ankur, and **Abhay Kumar Singh**. Lee metric codes for symbol-pair read channels, **Discrete Mathematics**,Volume 349, Issue 3, 2026. .
2. Hai Q Dinh, **Abhay Kumar Singh**, Pratyush Kumar, and Songsak Sriboonchitta. Cyclic codes over the ring $GR(p^e, m)[u]/\langle u^k\rangle$. **Discrete Mathematics(Elsevier),** 343(1):111-543, 2020.
3. Hai Q Dinh, **Abhay Kumar Singh**, Pratyush Kumar, and Songsak Sriboonchitta. On the structure of cyclic codes over the ring $\mathbb{Z}_{2^s}[u]/\langle u^k\rangle$. **Discrete Mathematics(Elsevier),** 341(8):2243-2275, 2018.

G. **Designs, Codes and Cryptography(Springer)**

1. Bose, M.K., **Abhay Kumar Singh** Construction of good cyclic codes from power functions over odd characteristic finite fields. **Des. Codes Cryptogr.** (2026), Accepted.
2. Bose, M.K., Parampalli, U. & **Abhay Kumar Singh**. Binary cyclic codes from permutation polynomials over $F_(2)^m$. **Des. Codes Cryptogr.** 93, 3903–3932 (2025).
3. Hai Q Dinh, **Abhay Kumar Singh**, Sukhamoy Pattanayak, and Songsak Sriboonchitta. Cyclic DNA codes over the ring $\mathbb{F}_2 + u\mathbb{F}_2 + v\mathbb{F}_2 + uv\mathbb{F}_2 + v^2\mathbb{F}_2 + uv^2\mathbb{F}_2$. **Designs, Codes and Cryptography(Springer)**, 86(7):1451-1467, 2018.
4. **Abhay Kumar Singh** and Pramod Kumar Kewat. On cyclic codes over the ring $\mathbb{Z}_p[u]/\langle u^k\rangle$. **Designs, Codes and Cryptography(Springer)**, 74(1):113, 2015.

H. **IEEE ISIT**

1. V. P Jha, U. Parampalli and **Abhay Kumar Singh**. *Stabilizer codes and Symbol-Pair Metric are Related*, **IEEE International Symposium on Information Theory** *(ISIT)*, pp. 2969-2973, 2022.
2. **Abhay Kumar Singh** and Narendra Kumar. *Construction of Distance-Optimal Z4-Linear Codes via Cyclic Codes Over a Non-Chain Ring*, **IEEE International Symposium on Information Theory** *(ISIT)*, 2025 (Accepted)

I. **Cryptography and Communications Discrete Structures, Boolean Functions and Sequences**

1. S S Bhoi, U Paramapalli, and **Abhay Kumar Singh**. "Construction of Multiple Constrained DNA Codes."**Cryptography and Communications Discrete Structures, Boolean Functions and Sequences***(Springer)* DOI 10.1007/s12095-024-00718-x, (2024).
2. Hai Q Dinh, Narendra Kumar and **Abhay Kumar Singh**. *Quantum Codes over non finite chain rings*, **Cryptography and Communications Discrete Structures, Boolean Functions and Sequences***(Springer)*, 14, pp. 909-923, 2022.

J. **Journal of Algebra and Its Applications**

3. Hai Q Dinh, **Abhay Kumar Singh**, Sampurna Satpati, and Songsak Sriboonchitta. Symbol triple distance of repeated root constacyclic codes of prime power lengths. **Journal of Algebra and Its Applications(World Scientific)**, 19(11):2050209, 2020.

K. **Applicable Algebra in Engineering Communication and Computing(Springer)**

1. Hai Q Dinh, Narendra Kumar, **Abhay Kumar Singh**, Manoj Kumar Singh, Indivar Gupta, and Paravee Maneejuk. On the symbol-pair distance of some classes of repeated-root constacyclic codes over a Galois ring. **Applicable Algebra in Engineering Communication and Computing(Springer)**, pages 1-18, 2021.

2. Hai Q. Dinh, **Abhay Kumar Singh**, and Madhu Kant Thakur. On symbol-pair distances of repeated-root constacyclic codes of length $2p^s$ over $\mathbb{F}_{p^m}+u\mathbb{F}_{p^m}$ and MDS symbol-pair codes. **Applicable Algebra in Engineering, Communication and Computing**, 34, no. 6 (2023): 1027-1043.
3. Hai Q Dinh, A Gaur, Indivar Gupta, **Abhay Kumar Singh**, Manoj Kumar Singh, and Roengchai Tansuchat. Hamming distance of repeated-root constacyclic codes of length $2p^s$ over $\mathbb{F}_{p^m} + u\mathbb{F}_{p^m}$. **Applicable Algebra in Engineering Communication and Computing(Springer),** 31:291-305, 2020.

L. **Journal of Applied Mathematics and Computing(Springer)**

1. Hai Q Dinh, **Abhay Kumar Singh**, and Madhu Kant Thakur. On Hamming and b-symbol Distance Distributions of Repeated-Root Constacyclic Codes of Length 4ps over $\mathbb{F}_{p^m} + u\mathbb{F}_{p^m}$, **Journal of Applied Mathematics and Computing(Springer)**, 66(1):885-905, 2021.
2. Hai Q. Dinh, Sampurna Satpati, and **Abhay Kumar Singh**. *Construction of optimal codes from a class of constacyclic codes*, **Journal of Applied Mathematics and Computing** (2022): 1-17.

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2. Hai Q Dinh, Atul Gaur, Pratyush Kumar, Manoj Kumar Singh and **Abhay Kumar Singh**. *Cyclic Codes Over Rings of Matrices*, **Advances in Mathematics of Communications**, 2022. doi: 10.3934/amc.2022073.

N. **Information Theory Journals**

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2. Bindal, E., Singh, **A.K., Singh**, M.K. (2025). A Novel PQ-KEM Based on Coding Theory. **INDOCRYPT** 2024. Lecture Notes in Computer Science, vol 15496. Springer, Cham. https://doi.org/10.1007/978-3-031-80311-6_13
3. Narendra Kumar, Siddhartha Siddhiprada Bhoi, Ruchir Gupta and **Abhay Kumar Singh**. *Sliding window symbol-pair constrained codes for energy harvesting*, **Annals of Telecommunications**, 78, pp. 71-77, 2023.
4. Pooja Mishra, Chiranjeev Bhaya, Arup Kumar Pal, and **Abhay Kumar Singh**. A novel binary operator for designing medical and natural image cryptosystems. **Signal Processing: Image Communication**, 98 (2021): 116377.
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11. **Abhay Kumar Singh**, Sukhamoy Pattanayak, Amrit Kumar Mahato, and Manoj Kumar Patel. On negacyclic codes over the ring $\mathbb{Z}_p+u\mathbb{Z}_p+\ldots+u^{k+1}\mathbb{Z}_p$. **Open Physics(De Gruyter Open)**, 14(1):200211, 2016.
12. **Abhay Kumar Singh** and B M Pandeya. A note on Generalization of Semi Clean Rings. **International Journal of Algebra**, 5(21):1039-1047, 2011.
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2. Narendra Kumar and **Abhay Kumar Singh**. DNA computing over the ring $\mathbb{Z}_4[v]/\langle v^2-v\rangle$. **International Journal of Biomathematics(World Scientific),** 11(07):1850090, 2018.

P. **Asian-European Journal of Mathematics(World Scientific)**

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