UNIVERSITÀ DEGLI STUDI DI MILANO

TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO ID CODE 5949

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di** _____

Scientist- in – charge: **Prof. Fratesi Guido**

[Name and surname] Avijeet Ray

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Ray
Name	Avijeet

PRESENT OCCUPATION

Appointment	Structure
Jan 30, 2019 to till now	Postdoctoral fellow at KAUST, SA

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree			
Specialization			
PhD	Condensed Matter Physics	IIT Roorkee, India	2018
Master	Physics	Ravenshaw University, India	2009
Degree of medical specialization			
Degree of European specialization			
Other			

REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City

FOREIGN LANGUAGES

Languages	level of knowledge
English (Fluent), Basic Italian	

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award

TRAINING OR RESEARCH ACTIVITY

description of activity

PROJECT ACTIVITY

Year	Project

PATENTS

Patent

CONGRESSES AND SEMINARS

Date	Title	Place

PUBLICATIONS

Books

[title, place, publishing house, year …]

[title, place, publishing house, year …]

[title, place, publishing house, year …]

Articles in reviews

1. A. Ray, P. C. Rout, and U. Schwingenschlögl, Ferromagnetism and Ferroelectricity in a Superlattice of Antiferromagnetic Perovskite Oxides Without Ferroelectric Polarization, NPJ Comput. Mater. 9, 165 (2023).

2. G. Shukla, M. H. Abdullah, A. Ray, S. Tyagi, A. Manchon, S. Sanvito, and U. Schwingenschlögl, "ZnSe and ZnTe as tunnel barriers for Fe-based spin valves", Phys. Chem. Chem. Phys, 25, 13533-13541 (2023).

3. M. R. Sahoo, A. Ray*, R. Ahuja, and N. Singh* "Activation of metal-free porous basal plane of biphenylene through defects engineering for hydrogen evolution reaction" Int. J. Hydrogen Energy 48, 10545-10554 (2023).

4. S. Gopalakrishnan, M. R. Sahoo, A. Ray, N. Singh, S. Harish, E. S. Kumar, and M. Navaneethan, "NiCo 2 S 4 cocatalyst supported Si nanowire heterostructure for improved solar driven water reduction: experimental and theoretical insights" Sustainable Energy & Fuels, 7 1687-1697 (2023).

5. A. Ray, D. Dey, and L. Yu, "Intrinsic ferromagnetism and restrictive thermodynamic stability in MA 2 N 4 and Janus VSiGeN 4 monolayers" Phys. Rev. Materials 6, L061002 (2022).

6. M. R. Sahoo, A. Ray, and N. Singh, "Theoretical insights into the hydrogen evolution reactions on VGe 2 N 4 and NbGe 2 N 4 , ACS Omega 7 (9), 7387-7844 (2022).

7. J. Li, M. Chen, A. Samad, H. Dong, A. Ray, J. Jhang, X. Jiang, U. Schwingenschlögl, J. Domke, C. Chen, Y. Han, T. Fritz, R. S. Ruof, B. Tian, and X. Zhang, "Wafer-scale single crystal monolayer graphene grown on sapphire substrate", Nature Materials, 21, 740-747, (2022).

8. S. Gopalakrishnan, G. Paulraj, M. K. Eswaran, A. Ray, N. Singh, and K. Jeganathan, "VS 2 wrapped Si nanowires as core-shell heterostructure photocathode for highly efficient photoelectrochemical water reduction performance", Chemosphere 302, 134708 (2022).

9. H. Al.-Jayyousi, M. K. Eswaran, A. Ray, M. Sajjad, J. A. Larsson, and N. Singh, "Exploring the superior anchoring performance of the two- dimensional nanosheets B 2 C 4 P 2 and B 3 C 2 P 3 for Lithium-Sulfur batteries, ACS Omega 7 (43) 38543-38549 (2022).

10. A. Ray, S. Tyagi, N. Singh, and U. Schwingenschlögl, "Inducing half metallicity in monolayer MoSi 2 N 4 ", ACS Omega 6, 30371-30375 (2021).

11. S. Pradhan, M. S. Laad, A. Ray, T. Maitra, and A. Taraphder "Hidden Fermi liquidity and topological criticality in the finite temperature Kitaev model", Solid State Commun. 332, 114308 (2021).

12. B. Padmanabhan, S. R. Joshi, R. Yadav, F. M. F. de Groot, A. K. Singh, A. Ray, M. Gupta, A. Singh, S. Elizabeth, S. Verma, T. Maitra, and V. K. Malik, "Electronic structure of Pr 2 MnNiO 6 from X- ray photo emission, absorption and density functional theory", J. Phys. Condens. Matter 30, 435603 (2018).

13. S. Kumar, J. Pal, S. Kaur, V. Sharma, S. Dahiya, P. D. Babu, M. Singh, A. Ray, T. Maitra, and A. Singh "Correlation between Multiferroic properties and processing parameters in NdFeO 3 - PbTiO 3 solid solutions", J. Alloys Compounds, 764, 824 (2018).

14. A. Singh, A. Jain, A. Ray, B. Padmanabhan, R. Yadav, V. Nassif, S. Husain, S. M. Yusuf, T. Maitra, and V. K. Malik, "Spin reorientation in NdFe 0.5 Mn 0.5 O 3 : Neutron scattering and Ab

initio study", Phys.Rev. B 96, 144420 (2017).

15. S. Kumar and A. Ray, "Phase transitions in spin-1/2 Falicov-Kimbal Model on a two-dimensional triangular lattice", J Low Temp Phys 189, 98 (2017).16. A. Ray and T. Maitra, "First principles study of transport gap in zircon and scheelite type of GdCrO 4 ", AIP Conf. Proc. 1832, 090017 (2017).

17. A. Ray and T. Maitra "Electronic structure and 3d-4f exchange interactions in zircon-type RCrO 4 oxides (R=Dy, Ho, Gd)", AIP Conf. Proc. 1665, 090017 (2015).

18. A. Ray and T. Maitra, "Nature of transport gap and magnetic order in zircon and scheelite type DyCrO4 from first principles", J. Phys.: Condens. Matter 27, 105501 (2015).

19. A. Ray and S. Sanyal, "Baryon inhomogeneities in a charged quark gluon plasma, Phys. Letts. B 726, 83 (2013).

Congress proceedings
[title, structure, place, year]
[title, structure, place, year]
[title, structure, place, year]

OTHER INFORMATION

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

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Place and date: KAUST Thuwal, 13 Nov 2023