

Emerging Two-Dimensional Materials and Their van der Waals Heterostructures: Chemical Exfoliation to Device Applications

A Thesis

submitted by

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for the award of the degree

of

Doctor of Philosophy



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Dedicated

To

My Parents



INDIAN INSTITUTE OF TECHNOLOGY MANDI

MANDI- 175 005 (H.P.), INDIA

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Declaration by the Research Scholar

I hereby declare that the entire work embodied in this Thesis is the result of investigations carried out by me in the *School of Basic Sciences*, Indian Institute of Technology Mandi, under the supervision of *Dr. Suman Kalyan Pal*, and that it has not been submitted elsewhere for any degree or diploma. In keeping with the general practice, due acknowledgements have been made wherever the work described is based on finding of other investigators.

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Declaration by the Research Advisor

I hereby certify that the entire work in this Thesis has been carried out by *Abdus Salam Sarkar* under my supervision in the *School of Basic Sciences*, Indian Institute of Technology Mandi, and that no part of it has been submitted elsewhere for any Degree or Diploma.

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Name of the Co-Guide (*if any*):

Date:

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In the name of Allah, the Most Gracious and the Most Merciful

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