This is to certify that, the dissertation entitled "Heat Transfer Augmentation In Tube In Tube Type Heat Exchanger Using Wire Coil Insert", which is being submitted herewith for the award of the 'Master of Engineering' in 'Mechanical Engineering' of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra State. This is the result of the original research work and contribution by 'Mr. Amit Suresh Waghode' under my supervision and guidance. The work embodied in this dissertation has not formed earlier for the basis of the award of any degree or compatible certificate or similar title of this any other diploma/examination body or university to the best of knowledge and belief.

Place: Aurangabad

Date: 20 7 17

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This is to certify that, the Dissertation report entitled "Experimental Investigation of Heat Transfer Enhancement through Elliptical Dimples for Divergent Channel"

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This is to certify that the dissertation report Entitled "Experimental Investigation of Heat transfer enhancement through Curved Delta Wing Vortex Generator"

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This is to certify that, the dissertation entitled "Effect Of TIG and SMAW For Strength Analysis", which is being submitted herewith for the award of the 'Master of Engineering' in 'Mechanical Engineering' of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra State. This is the result of the original research work and contribution by 'Mr. Kailas Annasaheb Gite under my supervision and guidance. The work embodied in this dissertation has not formed earlier for the basis of the award of any degree or compatible certificate or similar title of this any other diploma/examination body or university to the best of knowledge and belief.

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This is to certify that, the dissertation entitled "Comparative Numerical Analysis of Thermal System with Sintered Copper Powder Wick Heat Pipe by using Water & Al₂O₃ Nanofluid as Coolant through Hybrid Vortex Al Plate", which is being submitted herewith for the award of the 'Master of Engineering' in 'Mechanical Engineering- Heat Power' of Dr. Babasaheb Ambedkar Marathwada Unversity, Aurangabad, Maharashtra State. This is the result of the original research work and contribution by 'Miss. Punam Madhukar Sonawane' under my supervision and guidance. The work embodied in this dissertation has not formed earlier for the basis of the award of any degree or compatible certificate or similar title of this any other diploma/examination body or university to the best of knowledge and belief.

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This is to certify that, the dissertation entitled "Enhancement of Aerodynamic Drag Reduction for Sedan Based Passenger Car Model Using Add on Device", which is being submitted herewith for the award of the 'Master of Engineering' in 'Mechanical Engineering- Heat Power' of Dr. Babasaheb Ambedkar Marathwada Unversity, Aurangabad, Maharashtra State. This is the result of the original research work and contribution by 'Mr. Shinde Shivaji Sanjiv' under my supervision and guidance. The work embodied in this dissertation has not formed earlier for the basis of the award of any degree or compatible certificate or similar title of this any other diploma/examination body or university to the best of knowledge and belief.

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This is to certify that, the dissertation entitled "heat transfer enhancement in double pipe heat exchanger using twisted tape", which is being submitted herewith for the award of the 'Master of Engineering' in 'Mechanical Engineering – Heat Power' of Dr. Babasaheb Ambedkar Marathwada Unversity, Aurangabad, Maharashtra State. This is the result of the original research work and contribution by 'Mr. Swapnil Chandrashekhar Karwande' under my supervision and guidance. The work embodied in this dissertation has not formed earlier for the basis of the award of any degree or compatible certificate or similar title of this any other diploma/examination body or university to the best of knowledge and belief.

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This is to certify that the dissertation I report entitled "Thermal Performance & Experimental Investigation of Heat Sink used for Power Electronic Applications"

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This is to certify that the Dissertation entitled

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This is to certify that the dissertation I report entitled

"OPTIMIZATION OF PROCESS PARAMETERS AFFECTING ON SPRING-BACK IN V-BENDING PROCESS FOR DEEP DRAW STEEL HSLA 420 STEEL USING FEA AND TAGUCHI TECHNIQUE"

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SHREEYASH COLLEGE OF ENGINEERING & TECHNOLOGY

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This is to certify that Mr. Nikhil B. Metange has successfully completed the Dissertation entitled "Experimental Investigation of Rotary Tiller Blades for Performance Analysis" under my supervision, in the partial fulfilment of Master of Engineering (Mechanical) of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

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Submitted by Department of Martinales In Sagar Garje

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This is to certify that the dissertation- II report entitled

"Experimental Investigation of Heat Transfer Enhancement in Shell and Tube Heat Exchangers Using Al₂O₃/water and CuO/water Nanofluid"

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This is to certify that the dissertation I report entitled

"COMPUTER AIDED ANALYSIS OF PRESS TOOL TO IMPROVE TOLERANCE ALLOCATION & PROCESS CONTROL"

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This is to certify that the Dissertation entitled

"THERMAL ANALYSIS OF CYLINDRICAL ROLLER BEARING WITH CHANGE IN ROLLER MATERIAL (SILICON CARBIDE AND STEEL)"

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