

Special Issue on Non-destructive Evaluation

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This special issue on Non-destructive Evaluation is dedicated to our guru and mentor Dr. Baldev Raj, the Former Director of Indira Gandhi Centre for Atomic Research as well as the National Institute of Advanced Studies, who passed away on January 8, 2018.

Dr. Baldev Raj was an eminent metallurgical engineer and distinguished nuclear scientist. His research findings and innovative contributions in acoustic emission, microstructural characterisation, corrosion science, ferrofluids, magnetic Barkhausen emission, radiographic fingerprinting of idols, medical diagnostics, inspection of nuclear components, life extension of aircrafts etc. are well cited and talked about and his books, encyclopaedia articles and publications are popular.

In this special issue, we have eight contributions. It is gratifying that these are from domains close to the heart of Dr. Baldev Raj viz. NDE, novel materials, welding and mechanical metallurgy. Chandraprakash et al. give a perspective on thermo-mechanical NDE phenomenon. Thirunavukkarasu et al. present studies on detection of voids in sodium bonded nuclear fuel pins using eddy current and X-radiography NDE techniques. Mohamed et al. and Shivaprasad et al. present recent research findings in ultrasonic NDE of meta-materials and polycrystalline materials

respectively. Gangadharan Raju et al. present an approach for estimation of crack tip fracture parameters from thermo-elastic stress analysis while Dipak Ghagare et al. discuss detection of cracks and prediction of fatigue life of components. Kuppusamy et al. and Bhat present results of NDE investigations of gas Tungsten arc welds and friction stir welds respectively.

Dr. Baldev Raj was inspired by famous quotes and he always used to share them in his e-mails. We close this preface with one quote which he shared last, for readers to understand the man he was.

“We build status our of snow, and weep to see them melt”

“For success, attitude is equally as important as ability”

- Walter Scott (August, 1771 to September, 1832)

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Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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