Structure, microstructure and magneto-elastic property study on $Co_{40}Ni_{29}Al_{31}$ ferromagnetic shapememory alloy ribbon

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Highlights

- The structure and microstructure of the sample were determined from XRD and SEM studies, which is a mixture of beta (β) and gamma phases (γ), the beta and gamma volume fractions were determined using Rietveld refinement.
- The Elastic properties of the ribbon sample in the low-temperature regime, without and with the field on the sample were determined using the sound velocity and internal friction data from the Vibrating reed method.
- The modification of the transformation temperatures and elastic properties is due to the stress and magnetic field respectively.
- The combined effect of magneto-elastic coupling the martensitic and inter martensitic transformations was suppressed and was evidenced by the sound velocity and is predominant in internal friction peaks under the magnetic field.