Table 3: Experimental and numerical results for maximum contact force (N)

maximum contact force (N)				
	Carbon-outside/ kevlar-inside	Kevlar-outside/ carbon-inside	Kevlar-only	Carbon-only
Experimental data	2952	2576	2097	3042
Numerical data	2911	2653	2075	2997
Percentage of discrepancy	1.4	2.9	1	1.5

that FE simulations can accurately predict the impact events. Table 3 compares experimental and numerical data for maximum contact force. The data presented in these tables reveal that there were minimal discrepancies between the two data sets.

5. Conclusion

This research studied the response of four composite cylinders to low-velocity impact with an emphasis on contact force, contact duration, and deflection. Furthermore, the experimental data were verified using FE analysis. It was also found that, of all the cylindrical composites, the carbon-only sample has the greatest contact force and the lowest deflection. Moreover, the kevlar-only specimen had the minimum contact force and the maximum deflection.

References

[1] Khalili, S. M. R., Soroush, M., Davar, A., Rahmani, O., 2011. "Finite element modeling of low-velocity impact on laminated composite plates and cylindrical shells", *Composite Structures,* Vol. 93, No. 5, pp. 1363-1375.

[2] Kumar, S., Rao, B. N., Pradhan, B., 2007. "Effect of impactor parameters and laminate characteristics on impact response and damage in curved composite laminates", *Journal of Reinforced Plastics and Composites,* Vol. 26, No. 13, pp. 1273-1290.

[3] Dassault System's Simulia Corp., 2010. "The ABAQUS6.10-1 user's manual", USA.