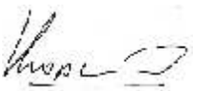
FASTER PROCESSING OF COMPOSITES; A NECESSITY

One of the limitations that do really affect the wider use of composites in automobiles is that the manufacturing processes currently being followed are not fast enough to make the composites and to make them compete with the metal forming operations. Metal forming operations can be done at a time as low as 15 seconds. Among the 35 manufacturing processes of thermoset and thermoplastic composites, compression moulding of SMC and the thermoforming and reinforced reaction injection moulding (RRIM) of FRTP are the three processes that have the potential for fast production cycles and can compete with the metal forming processes. Many innovative developments have made these methods still more attractive.

There are still a few technological hurdles to be overcome, but with the use of new bio-processed resin systems, composites have also become environment friendly. Reinforced Reaction Injection Moulding (RRIM) particularly with polyurethane and caprolactum (for Nylon 6) are fast processing methods. While SMC has matured to give components with class A finish, similar finish could not yet be achieved in FRTP components. Such components are now being used for under bonnet applications.

In India, sufficient attention has not yet been given to these methods. The development of these methods need several associated developments including machinery for SMC making, hydraulic and thermoforming presses, process machinery for making glass mat and natural fibre mat thermoplastic sheets, moulds and forming dies etc. There is scope for several units to come up in these processing routes.

Along with the development of these materials, their recycling options have also to be developed so that environment protection regulations can be maintained.



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