Visual description techniques are particularly important for the design of hybrid systems because specifications of such systems usually have to be discussed between engineers from a number of different disciplines. Modularity is vital for hybrid systems not only because it allows to handle large systems, but also because hybrid systems are naturally decomposed into the system itself and its environment.

Based on two different interpretations for hierarchic graphs and on a clear hybrid computation model, we develop HyCharts. HyCharts consist of two modular visual formalisms, one for the specification of the architecture and one for the specification of the behavior of hybrid systems. The operators on hierarchic graphs enable us to give a surprisingly simple denotational semantics for many concepts known from statechart-like formalisms. Due to a very general composition operator, HyCharts can easily be composed with description techniques from other engineering disciplines. Such heterogeneous system specifications seem to be particularly appropriate for hybrid systems because of their interdisciplinary character.