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Paul S. Muhly* (pmuhly@math.uiowa.edu), Department of Mathematics, University of Iowa, Iowa City, IA 52242, and **Baruch Solel**, Department of Mathematics, Technion, 32000 Haifa, Israel. *Functional Representations of the Hardy Algebra and Some Applications.*

Let E be a W^* -correspondence over a von Neumann algebra M and let $H^\infty(E)$ be the associated Hardy algebra. We show that for each faithful normal representation σ of M , $H^*(E)$ may be represented as a class of functions on the unit ball of the *dual* of E , E^σ . The resulting functions are analogues of Schur class functions that one finds in the classical setting when $M = \mathbb{C} = E$. The functions in $H^\infty(E)$ also have a realization in terms of a systems matrix of colligation. We apply this representation theory to study the automorphisms of $H^\infty(E)$ and obtain generalizations of work of Davidson and Pitts, and of Katsoulis and Kribs. (Received July 27, 2006)