1086-VN-2243 **Peter Adams** (p.adams@uq.edu.au), **Darryn E Bryant** (db@maths.uq.edu.au), **Saad I El-Zanati*** (saad@ilstu.edu) and **Wannasiri Wannasit** (nasit049@yahoo.com). *On the spectrum problem for cubic graphs of order 8.*

Let H and G be graphs such that G is a subgraph of H. A G-*decomposition* of H is a set $\Delta = \{G_1, G_2, \ldots, G_t\}$ of pairwise edge-disjoint subgraphs of H each of which is isomorphic to G and such that $E(H) = \bigcup_{i=1}^{t} E(G_i)$. A G-decomposition of K_m is also known as a (K_m, G)-*design*. The problem of determining all values of m for which there exists a (K_m, G)-design is commonly called the *spectrum problem for* G. We settle the spectrum problem for cubic graphs of order 8 by showing that if G is a cubic graph of order 8, then there exists a (K_m, G)-design if and only if $m \equiv 1$ or $16 \pmod{24}$. (Received September 25, 2012)