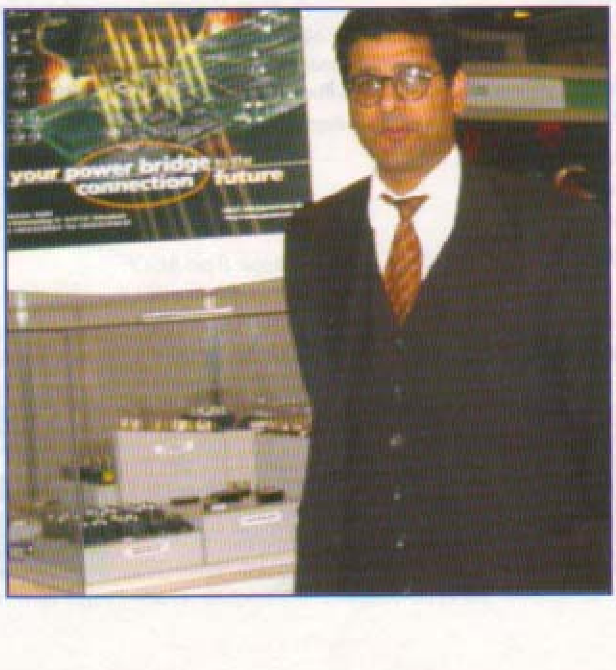
**(Left). Expectations of exhibitors have been met...**

**(Below, left). ...within Power Electronics Exhibition at the NEC Birmingham**



**(Right). "I met many potential customers and received inquiries at Power Electronics Exhibition," states Powersem's CEO, Ashok Chadda**
**Photograph AS**

Concerning power semiconductors, in the low power range the only competitor to the IGBT is the power MOSFET. Within this market section, device selection is mainly application specific and is determined by cost, size, speed and thermal requirements. "The main advantage of the IGBT over the MOSFET is lower on-state losses and smaller die size. Until now, the IGBT was mainly considered for low frequency with less than 20kHz, low duty cycle applications. Being a unipolar device, the switching speed of the power MOSFET is much faster due to the lack of tail current. With the IGBT, due to the injection of holes to reduce the drift region resistance, there is a finite time required for the excess carriers to recombine, which restricts the switching time. Recent development of IGBTs has expanded the boundary of IGBTs up to 150kHz, which is a market traditionally held by MOSFETs. This is achieved by optimum anode/cathode design, subsequent control of the minority carrier lifetime and co-packaging with more efficient fast-recovery diodes," explained M. Sweet from the 'Emerging Technologies Research Centre' at De Montfort University in Leicester.

"With the present trend toward effective device optimisation and process developments, the IGBT has, and will continue, to dominate the medium power applications. At the lower power section, the IGBT will gain ground from the power MOSFET. With the present market trend the IGBT will conquer the high power range up to 6.5kV and continually replace GTO components in certain applications. However, due to limitations with the inherent device physics of the IGBT, there is a significant potential for novel structures to successfully enter the market," concluded Sweet at Power Electronics Birmingham.

Being the second event in a new location at the NEC Birmingham the exhibition itself met the expectations of most participants. "With the combination of drives within Drives & Controls we had the chance to meet our key customers and introduce to them our new PI-IPM," said Davide Giacomini from International Rectifier. Also Eupec and Semikron were satisfied by this combination. "For me as a manufacturer and supplier of power semiconductors, this was a fine event and I was very happy with this exhibition. Before I came to Birmingham I was a little bit critical, but I met so many potential customers and I have already received some inquiries," stated Powersem's CEO, Ashok Chadda.

**AS**