Dec. 5, 2012. Suman Datta, professor of electrical engineering, at Penn State, University Park, Pennsylvania, USA, has been named an IEEE Fellow. He is being recognized for his contributions to high-performance advanced silicon and compound semiconductor transistor technologies. Datta's contributions in advanced silicon CMOS and compound semiconductor transistors have made a strong impact to the semiconductor industry and academic research, and have directly contributed to the advancement of high performance logic transistor technology over the last decade.

The IEEE grade of Fellow is conferred by the IEEE Board of Directors upon a person with an outstanding record of accomplishments in any of the IEEE fields of interest. The total number selected in any one year cannot exceed one-tenth of one percent of the total voting membership. IEEE Fellow is the highest grade of membership and is recognized by the technical community as a prestigious honor and an important career achievement. 298 individuals have been elevated to IEEE Fellow for 2013.

In the area of advanced high-performance Silicon logic transistors, Datta, along with his colleagues at Intel Corporation, has demonstrated several research breakthroughs such as strained channel CMOS transistors with high-K/metal-gate stack and non-planar multi-gate CMOS transistors called the Tri-Gate or 3D transistors. Datta has made important contribution towards the exploration of compound semiconductors as high-mobility channel replacement and their integration on silicon substrate for beyond Silicon low-power logic. At Penn State, Datta’s research group has recently demonstrated efficacy of bandgap engineering in compound semiconductor based tunnel transistors for steep slope device applications with markedly enhanced on-current.

Datta received his Bachelors in Electrical Engineering from the Indian Institute of Technology, Kanpur, India, and his Ph.D. in Electrical & Computer Engineering from the University of Cincinnati, USA, in 1995 and 1999, respectively. He is author / co-author of over 140 refereed journal and conference publications and holds 142 US patents related to advanced process technologies and novel transistor architectures.

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