

Asad Abidi

Professor, Electrical Engineering
University of California, Los Angeles

TAKING PAKISTANI EE'S TO THE NEXT LEVEL

Why Don't Pakistani EE's Make a Greater Impact on the Profession?

- ① How many great Pakistan-born EE's can you name?
- ① How many famous Pakistani EE professors are there in the world?
- ① Which widely used textbook was written by an author of Pakistani origin?
- ① How many of you will turn down a well-paying job with a large company, in order to pursue a PhD?

All the more surprising since ...

- ⦿ The best and the brightest choose EE for university studies
- ⦿ There is strong competition to excel
- ⦿ No dearth of textbooks
- ⦿ Most young people want to work in the buzzwords: nanotechnology, quantum computing, next generation Internet, 5G wireless ...

This reflects on the educational institutions

- ⦿ Poor contact with leading trends in curriculum development
- ⦿ Over-specialization into vocational, job-oriented coursework
 - Although technology changes every 5 to 7 years
 - Engineers re-invent themselves 3 times or more in their career

Insights &
Invention

**Engineering
Techniques**

Math & Science
Foundations

Do our students show ...

- ⦿ Critical thinking?
- ⦿ A historical understanding of their subject?
- ⦿ A hands-on philosophy of design, build, and tinker?
- ⦿ Meaningful familiarity with applications, not just a recitation of buzzwords?
- ⦿ Desire for self-study around the subject, beyond the textbook?

University Faculty

- ⦿ Continued intellectual development seems to stop upon return to Pakistan
- ⦿ Institutional pressures to publish, work the numbers game
 - Stifles thoughtful growth
 - Rewards for curricular innovation?
- ⦿ New insights gained through contact with master teachers, great institutions
- ⦿ “Teach the Teachers” program

What Lies Ahead?

- ⦿ Atta-ur-Rehman's efforts finally put higher education and research on the national agenda
- ⦿ Too early to say how they will play out
- ⦿ Political, economic conditions too unpredictable to guarantee continuity
- ⦿ Members of the academic community must take on causes for the long term, sustain their own growth through good and bad times