



## EINLADUNG

**Frau  
Professorin Karabi Biswas**

**IIT Kharagpur  
Indien**

wird einen Vortrag halten zum Thema:

**„Fractional Order Element (FOE):  
An Overview“**

Differentiation and integration are usually regarded as integer operations. This means that we differentiate or integrate a function once, twice, or any whole number of times. In a letter to L'Hospital in 1695, Leibniz raised the possibility of generalizing the operation of differentiation to non-integer orders. So, the concept of Fractional Order Calculus (FOC) is as old as conventional calculus, but the subject did not get the momentum due to its limited use in engineering applications. Development of practically realizable fractional order elements (FOE) or "fractance" (similar to commonly used capacitance, resistance or inductance) whose mathematical representation is represented by fractional order differential equation is a natural consequence of fractional calculus. But the realization of two terminal Fractional Order element (FOE) is not straight forward. The challenges are in design and fabrication of the FOE with desired specifications, so that it can be used as a circuit element or sensing device. This lecture gives an overview of Fractional Order Element, discusses realization of a Fractional Order Element and its prospect as a sensor.

### Zeit und Ort:

**Dienstag, 23. Juni 2009, 17.00 Uhr s. t.  
Gebäude C6 3 (ehemals 22), Hörsaal II**

Alle Interessenten sind herzlich eingeladen.

Die Dozenten der Fachrichtungen 7.4 - Mechatronik und 8.4 - Materialwissenschaft und Werkstofftechnik

Die Gastrednerin wird betreut von Herrn Prof. Dr. A. Schütze, Lehrstuhl für Messtechnik an der Universität des Saarlandes.

Die Fachrichtungen  
7.4 - Mechatronik und  
8.4 - Materialwissen-  
schaft und Werkstoff-  
technik

Ingenieurwissenschaftliches  
Kolloquium