Recently, the great revolution is taking place in the field of electronic instrumentation for precise measurement of the physical as well as chemical parameters. It is found that, the embedded technology is an innovative and ubiquitous field of electronics instrumentation particularly the development of an embedded instrumentation for plethora of applications. Now days, a novel field of Smart Sensor Module is emerging. Smart Sensor Module is electronic system, wherein the intellectual devices are incorporated along with analog signal condition. It is standardized by IEEE 1451 standard.

Therefore, emphasizing the fact that, the confluence of two novel technologies, an ubiquitous embedded technology for development of Smart Sensor Module (SSM) and synthesis of electronic materials for development of sensors required for SSM. The sensors are developed for relative humidity, temperature, CO2 gas, H2S gas and NH3 gas. Moreover, according to IEEE 1451 standards, the Smart sensor module is developed wherein the novel embedded philosophy is employed. The results regarding the synthesis sensor material, hardware design and software designing and obtained results presented in this book.

Dr. Suhas Namdev. Patil is Assist. Professor in Department of Electronics, T. C. College, Baramati. Dist. Pune (India). His area of research is the Smart Sensor Module design, Embedded System, WSN and IoT, Instrumentation designing. He presented more than 40 research papers in National/International conferences & 20 papers in International Journal.

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Patil, Ladgaonkar, Pawar

Suhas Patil
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Tuljaram Chaturchand College
Baramati

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Zugl. / Approved by: To keep pace with the modern technologies, a Smart Sensor Module is developed for monitoring of typical parameters such as relative humidity, environmental temperature and concentration of various gases.

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Principal
Tuljaram Chaturchand College
Baramati