

ADAPTIVE MATERIALS AND STRUCTURE

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ABSTRACT. In the last few decades, there has been an increasing need to design and construct material systems that can adapt their behavior, composition, outlook, and realize shape to the needs imposed on them by changing environmental and design requirements. This paper gives a short overview of the field of adaptive materials and structures. The objective is to make the researchers in the field and related disciplines familiar with some ideas and developments in this area and to provide a basis for more extensive surveys. Furthermore results of some new investigations of the post-critical behavior, stability, and control of imperfection sensitive elastic structures will be presented.

Keywords: smart materials, adaptive structures, sensor, self-diagnosis, self-repair, post-critical behavior, bifurcations, imperfections.

References

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