

סמינר - SEMINAR

הנך מוזמנת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ד' 22.03.2017 (כ"ד באדר, תשע"ז), בבניין דן קאהן, אודיטוריום 1, 13:30.

ירצה:

Asst. Prof. Gal Shmuel
Faculty of Mechanical Engineering
Technion

על הנושא:

Universality of the Frequency Spectrum of Laminates

The seminar will be given in English

להלן תקציר ההרצאה:

Waves in periodic media undergo multiple scattering and interference. As a result, their frequency spectrum is divided to bands in which waves pass freely, and *gaps* in which waves cannot propagate. This band diagram depends on the physical and geometrical properties of the repetitive cell, through a dispersion relation.

Using a new representation of the dispersion relation of laminates, I will show how their frequency spectrum admits a universal structure, *independent* of the thickness of each constituent and its particular physical properties. This structure allows deriving the maximal width, the average width, and the density of the band gaps in the spectrum—the latter found to be *universal*. Rules for tailoring laminates according to desired spectrum properties thereby follow. Finally, I will show that the frequency spectrum of various finitely deformed laminates is also endowed with the same compact structure. Such materials are capable of undergoing large deformations and their mechanical properties are changeable, thereby their spectrum can be tuned. Our approach facilitates characterizing this tunability, as I will demonstrate by way of examples.

This talk is based on a joint work with Ram Band.

בברכה,

פרופ'ם שמואל גאל
מרכז הסמינרים