

Fig. 2. Concept of multiscale multifunctional graphene nanoplatelets-reinforced polymer composites.



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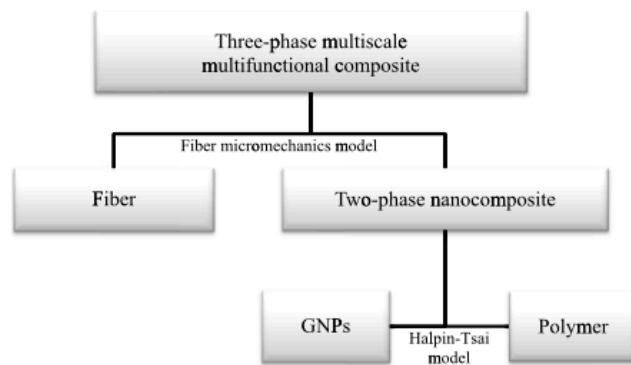


Fig. 3. Hierarchy of the three-phase GNP/fiber/polymer multiscale composites.

From: M. Rafiee, F. Nitzsche and M.R. Labrosse, “Modeling and mechanical analysis of multiscale fiber-reinforced graphene composites: Nonlinear bending, thermal post-buckling and large amplitude vibration”, *International Journal of Non-Linear Mechanics*, Vol. 103, pp 104-112, July 2018

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Selected Publications:

Shooshtari A, Rafiee M. Nonlinear forced vibration analysis of clamped functionally graded beams. *Acta Mech* 2011;221:23–38.

Mohammad Rafiee, Soraya Mareishi and Mohsen Mohammadi, “An investigation on primary resonance phenomena of elastic medium based single walled carbon nanotubes”, *Mechanics Research Communications*, Vol. 44, pp 51-56, 2012

Rafiee M, Yang J, Kitipornchai S. Large amplitude vibration of carbon nanotube reinforced functionally graded composite beams with piezoelectric layers. *Compos Struct* 2012;96:716–25.

M. Rafiee, M. Mohammadi, B. Sobhani Aragh, H. Yaghoobi, Nonlinear free and forced thermo-electro-aero-elastic vibration and dynamic response of piezo-electric functionally graded laminated composite shells, Part I:

theory and analytical solutions, *Composite Structures* 103 (2013) 179–187.

M. Rafiee, M. Mohammadi, B. Sobhani Aragh, H. Yaghoobi, Nonlinear free and forced thermo-electro-aero-elastic vibration and dynamic response of piezo-electric functionally graded laminated composite shells: Part II: numerical results, *Composite Structures* 103 (2013) 188–196

Mareishi S, Mohammadi M, Rafiee M. An analytical study on thermally induced vibration analysis of FG beams using different HSDTs. *Appl Mech and Mater* 2013;249:784–91

M. Rafiee, Jie Yang and Siritiwat Kitipornchai, “Thermal bifurcation buckling of piezoelectric carbon nanotube reinforced composite beams”, *Computers & Mathematics with Applications*, Vol. 66, No. 7, pp 1147-1160, October 2013

B. Sobhani Aragh, Aida Zeighami, Mohammad Rafiee, M.H. Yas and Magd Abdel Wahab, 3-D thermo-elastic solution for continuously graded isotropic and fiber-reinforced cylindrical shells resting on two-parameter elastic foundations. *Applied Mathematical Modelling*, Vol. 37, pp 6556-6576, 2013

Rafiee M, He XQ, Liew KM (2014) Non-linear dynamic stability of piezoelectric functionally graded carbon nanotube-reinforced composite plates with initial geometric imperfection. *Int J Non-linear Mech* 59:37–51

Mareishi, S., Rafiee, M., He, X.Q. and Liew, K.M. (2014), "Nonlinear free vibration, postbuckling and nonlinear static deflection of piezoelectric fiber-reinforced laminated composite beams", *Compos. Part B: Eng.*, 59, 123-132.

M. Rafiee, X.F. Liu, X.Q. He and S. Kitipornchai, “Geometrically nonlinear free vibration of shear deformable piezoelectric carbon nanotube/fiber/polymer multiscale laminated composite plates”, *Journal of Sound and Vibration*, Vol. 333, No. 14, pp 3236-3251, July 2014

M. Rafiee, X.Q. He and K.M. Liew, “Nonlinear analysis of piezoelectric nanocomposite energy harvesting plates”, *Smart Materials and Structures*, Vol. 23, 065001 (13 pp), 2014

M. Rafiee, X.Q. He, S. Mareishi and K.M. Liew (City University of Hong Kong), “Nonlinear response of piezoelectric nanocomposite plates: Large deflection, post-buckling and large amplitude vibration”, *International Journal of Applied Mechanics*, Vol. 7, No. 5, 1550074, October 2015

Mohammad Rafiee, Fred Nitzsche and Michel Labrosse, “Rotating nanocomposite thin-walled beams undergoing large deformation”, *Composite Structures*, Vol. 150, pp 191-199, May 2016

M. Rafiee, F. Nitzsche and M.R. Labrosse, “Effect of functionalization of carbon nanotubes on vibration and damping characteristics of epoxy nanocomposites”, *Polymer Testing*, Vol. 69, pp 385-395, May 2018

M. Rafiee, F. Nitzsche and M.R. Labrosse, “Modeling and mechanical analysis of multiscale fiber-reinforced graphene composites: Nonlinear bending, thermal post-buckling and large amplitude vibration”, *International Journal of Non-Linear Mechanics*, Vol. 103, pp 104-112, July 2018