

Requests for Collaboration

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<p>Research Interests</p> <ul style="list-style-type: none">● Damage tolerance design of carbon fibre composites and fibre metal laminates (FMLs)● Interlaminar toughening in carbon fibre composite laminates by introducing a variety of interleaf layers● Characterization of carbon fibre composite manufacturing and processing	
<p>Creative Achievements in The Application of New and Existing Science and Technology</p> <p>Moulding method (VaRTM [1], hot-press, and filament winding moulding), processing (cutting and trimming), strength and damage behaviour until fracture (under tensile, fatigue, impact and bearing loading [2, 4, 5]) of carbon fibre composites and fibre metal laminates have been experimentally and analytically evaluated for their wider application in real primary structures and to establish optimized structural design. Impact localization technique using guided lamb waves for anisotropic plates such as carbon fibre composite laminates have been also improved in order to achieve structural health monitoring for composite structures [3].</p> <p>The originality can be found in my concept that aims better damage tolerance in carbon fibre composites structures by hybridizing and multi-material technique using interleafs of complex geometry [2] and/or metal films [5] inserted in the composite laminates.</p>	
<p>Technology (Product, Process, Device, Service etc.) That I Want to Request for Collaboration</p> <ul style="list-style-type: none">● Fracture and fatigue tests for carbon fibre composite and FML structure using a scale model● Bonding strength between metal and polymer matrix composites for multi-materials structures● Crack guidance based on interfacial strength control for better interlaminar toughness	
<p>A List of 5 Key Publications</p> <p>[1] Effects of Ultrasonic Waves during Resin Impregnation on the Mechanical Properties of Unidirectional Composite Materials, Y. Kuratani, A. Miki, N. Nanami, <u>H. Nakatani</u>, H. Hamada, <i>Open Journal of Composite Materials</i>, 8(1), 1-10 (2017).</p> <p>[2] Damage Suppression in UD-CFRP with Fibre Discontinuity by Interlaminar Toughening using Polyamide Mesh, <u>H. Nakatani</u>, T. Imamura, K. Osaka, <i>Proceedings of the 17th European Conference on Composite Materials</i>, Paper ID: TUE-1_SEV_3.03-08 (2016).</p> <p>[3] Improving accuracy of acoustic source localization in anisotropic plates, <u>H. Nakatani</u>, T. Kundu, N. Takeda, <i>Ultrasonics</i>, 54(7), 1776-1788 (2014).</p> <p>[4] Effect of Prepreg Cut on the Mechanical Properties in CFRP Laminates, <u>H. Nakatani</u>, K. Nakaya, A. Matsuba, Y. Kouno S. Ogihara, <i>Journal of Solid Mechanics and Materials Engineering</i>, 5(12), 742-752 (2011).</p> <p>[5] Damage Characterization of Titanium/GFRP Hybrid Laminates Subjected to Low-Velocity Impact, <u>H. Nakatani</u>, T. Kosaka, K. Osaka, Y. Sawada, <i>Composites Part A</i>, 42(7), 772-781 (2011).</p>	