FEM



iFEM (Case III)

Figure 8. The FEM and iFEM deformed shapes (with same magnification factor of 116).

From: A. Kefal, "Displacement and stress monitoring of a curved stiffened panel based on inverse finite element method", Conference that is not identified in the pdf file, May 2019
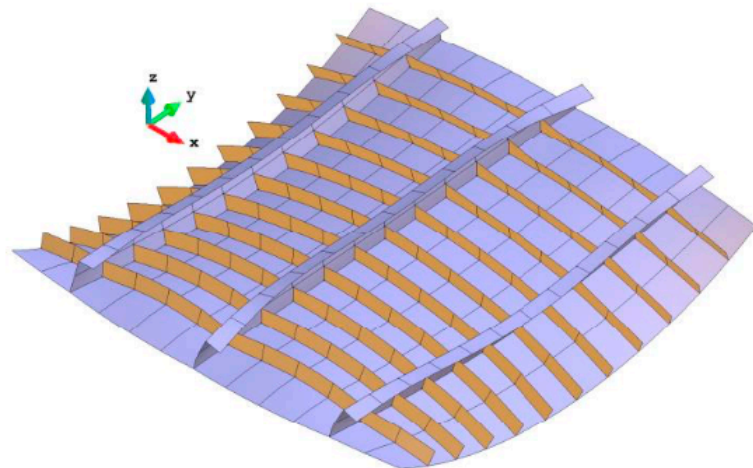
## Professor Adnan Kefal

See:
https://scholar.google.com/citations?user=LxDGbcAAAAAJ&hl=en
https://tr.linkedin.com/in/adnan-kefal-895399aa
https://www.researchgate.net/profile/Adnan_Kefal

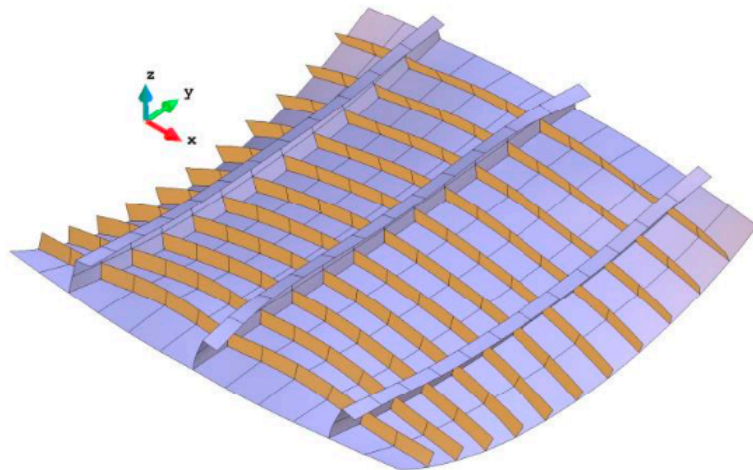Naval Architecture and Ocean Engineering
Istanbul Technical University, Istanbul, Turkey

## Biography:

Dr. Adnan Kefal is an Assistant Professor and the Vice Dean of Research & Development at the Faculty of Naval Architecture and Ocean Engineering, Istanbul Technical University (ITU). He completed his undergraduate education in 2013 with the first rank in the same faculty at ITU. He received his Ph.D. degree in 2017 from Naval Architecture, Marine and Ocean Engineering Department at the University of Strathclyde,

Glasgow, UK in the fields of computational structural mechanics and structural health monitoring. During his PhD studies, he worked as a visiting researcher at NASA Langley Research Center, USA in summer 2016. Prior to joining ITU, he was a research scientist at the Integrated Manufacturing Technologies Research and Application Center of Sabanci University. Dr. Kefal's areas of expertise involve computational mechanics and engineering optimization techniques with the focus on large-scale structures, topology optimization, structural health monitoring, shape and stress sensing, energy harvesting, and mechanics of composite structures. He is co-author of more than 13 journal articles published in SCI-indexed high impact journals, and also prepared and presented over 22 conference papers on these topics.

**Selected Publications:**

Kefal, A., & Oterkus, E. 2014. D3.3 (WP3) – Hydrodynamic and structural analysis. Public Deliverable, The INCASS Project (FP7/2007-2013 grant agreement no 605200).

Kefal, A., and Oterkus, E., 2015. Structural Health Monitoring of marine structures by using inverse Finite Element Method. Analysis and Design of Marine Structures V, pp. 341.

Kefal, A., Hizir, O., & Oterkus, E. 2015. A smart system to determine sensor locations for structural health monitoring of ship structures. In: Proceedings of 9th International Workshop on Ship and Marine Hydrodynamics, Glasgow, Scotland.

Kefal, A., and Oterkus, E., 2016. Displacement and stress monitoring of a Panamax containership using inverse finite element method. Ocean Engineering, 119, pp. 16-29.

Kefal, A., and Oterkus, E., 2016. Displacement and stress monitoring of a chemical tanker based on inverse finite element method. Ocean Engineering, 112, pp. 33-46.

Kefal, A., Oterkus, E., Tessler, A., and Spangler, J.L., 2016. A quadrilateral inverse-shell element with drilling degrees of freedom for shape sensing and structural health monitoring. Engineering Science and Technology, an International Journal, 19, pp. 1299-1313.

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A. Kefal, A. Tessler and E. Oterkus, "An inverse finite element method based on refined zigzag theory for structural health monitoring of laminated composite and sandwich shell structures", 14th U.S. National Congress on Computational Mechanics (USNCCM14), 17-20 July 2017

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Adnan Kefal, Jimmy Bunga Mayang, Erkan Oterkus and Mehmet Yildiz, "Three-dimensional shape and stress monitoring of bulk carriers based on iFEM methodology", Ocean Engineering, Vol. 147, pp 256-267, 2018

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A. Kefal, "Displacement and stress monitoring of a curved stiffened panel based on inverse finite element method", Conference that is not identified in the pdf file, May 2019

Adnan Kefal, Kazim Ahmet Hasim and Mehmet Yildiz, "A novel isogeometric beam element based on mixed form of refined zigzag theory for thick sandwich and multilayered composite beams", Composites Part B: Engineering, Vol. 167, pp 100-121, 15 June 2019

Kazim Ahmet Hasim, Adnan Kefal, Erdogan Madenci, "Isogeometric plate element for unstiffened and blade stiffened laminates based on refined zigzag theory", Composite Structures, Vol. 222, Article 110931, 15 August 2019

Adnan Kefal, "An efficient curved inverse-shell element for shape sensing and structural health monitoring of cylindrical marine structures", Ocean Engineering, Vol. 188, Article 106262, 15 September 2019

M.Y. Li, A. Kefal, B. Cerik and E. Oterkus, "Structural health monitoring of submarine pressure hull using inverse finite element method", Trends in the Analysis and Design of Marine Structures, Parunov and Guedes Soares (Editors), 2019