1 Project title / research topic

Numerical modelling and finite element computations of fibre reinforced plastic constructions

1.1 Field of project

- Applied numerical mechanics
- Composite mechanics

1.2 Project information

- Results:

  1. Berechnung der Hertzschen Pressung an kohlenstoffaserverstärkten Wälzkörpern., Forschungsarbeit für die Deutsche Forschungsanstalt für Luft- und Raumfahrt e.V., Institut für Strukturmechanik, Braunschweig, 1995.
  2. Development of modelling and dimensioning methods of composite machine parts. FKFP Project, No. 0250/99

- Publications

  1. Égert J.: Berechnung der Hertzschen Pressung an kohlenstoffaserverstärkten Wälzkörpern., Deutsche Forschungsanstalt für Luft- und Raumfahrt e.V., Institut für Strukturmechanik, Braunschweig, Forschungsbericht, 42 Seiten, 1995.
  2. Égert J.-- Horváth Á.: Influence of fibre reinforcement on the contact stresses of elastic bodies, Proc. 6-th Int. Conf. on Numerical Methods in Continuum Mechanics, p. 56.-60., High Tatras, Slovakia, 16.-18. Sept. 1996.
  3. M. Csizmadia B. -- Égert J.: Material- and strength-properties of fabric composites, Scientific Bulletin of the „Polytehnica" University of Timisoara, Transaction on Mechanics, (ISSN-6077) Vol. 47 (61), 2002, p. 191-197.
  4. Égert J. -- M. Csizmadia B. -- Molnár-Égert É. -- Nagy Z.: Measurement based mechanical modeling of plane weave fabric composite parts, Scientific Bulletin of the „Polytehnica" University of Timisoara, Transaction on Mechanics, (ISSN-6077) Vol. 47 (61), 2002, p. 99-106.
  5. Égert J.: Beitrag zu den Festigkeitsverhältnissen von faserverstärkten Rollen beim reibungslosen Kontakt, Technische Mechanik, Band 23, Heft 1, (2003), Seiten 10-20.
  6. Égert J.: Preliminary strength studies for constructing of light fiber reinforced cylindrical gears, Acta Technica Napocensis, (ISSN 1221-5872) Series: Applied Mathematics and Mechanics, No. 46., Vol. II. (2003), p. 45-52.
  7. Égert J.: Numerischer Nachweis der makroskopischen mechanischen Modellierbarkeit von Textil-Faserverbundstrukturen, Acta Technica Napocensis, (ISSN 1221-5872) Series: Applied Mathematics and Mechanics, No. 46., Vol. II. (2003) , p. 37-44.
  8. *Égert J.* -- Varga-Horváth Á.: The influence of wearing course on contact stresses of linear elastic anisotropic bodies, Acta Mechanica Slovaca, 2004. No. 4. p. 1-8.

- Running projects

1. Substantiation of adaption of textile composites in agriculture.
   OTKA T 048359, 2005-2008.
   Participants: Szent István University Gödöllő,
   Institute of Technology of Ministry of Agriculture.
2. Life-time management of metall-polymer hybrid pipes.
   OTKA T 049126, 2005-2007.
   Participants: University of Miskolc,
   Budapest University of Tecnology and Economics.
3. Integrity of polymer matrix composite reinforced hybrid pipes.
   GVOP-3.1.1-2004-05-0215/3.0, 2005-2007.
   Participants: University of Miskolc,
   Budapest University of Tecnology and Economics.
   BUDAPLAST, Inc.
   POLINVENT Ltd.

1.3 Short term goals – potential project partners

Development and application of numerical macromechanical modelling of fibre reinforced composite machine parts.
Testing and development of failure criterions.

Industial firms interested in application of fibre reinforced constructions

1.4 Contact information

Project leader: János Égert, PhD, Dr. habil., associate professor,
Széchenyi István University,
Department of General Mechanical Engineering,
H-9026 Győr, Egyetem tér 1.
Phone: 36 96 613 620
E-mail: egert@sze.hu