



MATDAT.com

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Material Properties Database and Estimation Tools

The Idea

The main idea behind MATDAT.COM project is to acquire existing, published material testing results and properties of design-relevant materials and to make this information searchable, comparable and available to members of our technical community (free for individual students and young researchers).

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Applications

- ✓ computer-based modelling and simulation of material behaviour
- ✓ calculations and numerical analyses (FEA) of load carrying capacity and durability
- ✓ material testing and characterisation
- ✓ material evaluation and selection
- ✓ estimation of advanced (cyclic, fatigue) material parameters from monotonic properties during early stages of the product development

Our Partners



University of Rijeka



TECHNISCHE UNIVERSITÄT DARMSTADT



Institut für Stahlbau und Werkstoffmechanik



PragTic Project



IGF Gruppo Italiano Frattura

MATerial properties DATabase and estimation/calculation tools for industry professionals, engineers, scientists and students

Advantages & Benefits

- ✓ save time and money - reduce number of tests
- ✓ easier/faster evaluation of more candidate materials
- ✓ shorter development time and lower expenses
- ✓ possibility of verification of own experimental results
- ✓ support for development of lightweight products
- ✓ enabling research requiring data on large number of different materials



Materials' Database



Estimation Methods & Tools



We support Students & young Scientists



Contribute Your Data

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WHAT IS MATDAT.COM?

Web-based MATERIAL properties DATABASE and a set of estimation/calculation tools for industry professionals, engineers, scientists, professors and students.

✓ Database contains design-oriented data obtained through testing of design-relevant (for now, mostly metallic) materials.

✓ Fully referenced and verified content - material data are acquired from relevant and reliable sources (articles from scientific journals and conferences, dissertations, technical reports, handbooks,...).

Knowledge-based expert system for the estimation of advanced (cyclic, fatigue) parameters of the material. Development and function of the system is based on the contents of the database.

Collaboration platform and users' community - we encourage and support cooperation and partnering with our users. Contribute additional material data available from the literature, or your own published data and make them available to other members of our technical community.

MATDAT EDU

We support efforts of students and young scientists by providing them full access to our database while they work on their projects and research. Contact us for more details.

CAMPUS option

Option for Universities and Faculties. MATDAT PRO and EDU users' accounts for all professors and students. Presentation of material testing facilities and labs on MATDAT.COM website.

SCREENSHOTS

In addition to the quantity and the accuracy of the data, we also pay great attention to its readability and structure. Modern web design techniques have been implemented in the development of the MATDAT.COM in order to help you use it efficiently and comfortably.

Robert Basan, D. Sc. in Mech. Eng. MATDAT.COM founder and project leader



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- ✓ over 1500 datasets for steels, aluminium and titanium alloys, cast steels/irons, weld metals (on 09/2012.)
- ✓ all datasets are fully referenced and carefully verified
- ✓ standard and advanced materials' properties
- ✓ open access to unalloyed steels
- ✓ user expandable (membership awarded)

- ✓ advanced search options
- ✓ detailed reporting for individual materials
- ✓ comparison of up to 5 materials
- ✓ images of microstructures/specimens
- ✓ stress-strain, stress- and strain-life diagrams