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In celebration of the 85th birthday of Dorin Șerban Ieșan

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Biography and Academic Career. Professor Dorin Șerban Ieșan is a great Romanian mathematician and illustrious teacher, with a distinguished academic career and significant contributions to the field of Continuum Mechanics, in particular in the Theory of Elasticity and Thermoelasticity. His results related to these subjects are highly original and extensive.

Being an extraordinary researcher, he is also a prominent lecturer and author of books and original papers, and a teacher of many students. Despite all his achievements and renown, he always remains a humble person, ready to provide advice and help.

Below we list major milestones in the life and activity of this distinguished scientist and outstanding human being.

Dorin Ieșan was born on April 8, 1941 in Rădăuți, Suceava county, in Bucovina - a historical region located in the northeastern part of Romania and southwestern Ukraine. Known as The

Land of Beech Trees, Bucovina is renowned for its stunning landscapes, rich history, and cultural heritage. It has a diverse history, having been part of the Principality of Moldavia, the Habsburg Monarchy, and later Romania and Ukraine. The region is famous for its painted monasteries, many of which are UNESCO World Heritage Sites. In this wonderful world of Bucovina, the child Dorin spent his childhood as a student of the primary school in *Vicovul de Sus*, not far from Rădăuți, where the family had moved after the Second World War, and graduated in 1954.

He graduated from the *Eudoxiu Hurmuzachi* National College in Rădăuți in 1957 and later from the Faculty of Mathematics and Mechanics at Alexandru Ioan Cuza University in Iași in 1963. Appreciated as an eminent student with special skills for scientific research, he has been actively involved in teaching and research. He earned his Ph.D. in Mathematics with a remarkable thesis entitled *Contributions to the study of boundary problems for thermoelasticity equations*, held on October 9, 1968, being under the supervision of Acad. Mendel Haimovici, the head of the school of mechanics at that time.

He has held various academic positions at the Alexandru Ioan Cuza University of Iași, Faculty of Mathematics, including preparator (1963–1965), Assistant Professor (1965–1968), Lecturer (1968–1975), Associate Professor (1975–1981) and Full Professor in 1981, a position he held until 2011 when he retired and became Emeritus Professor of the Faculty of Mathematics and Scientific Researcher I at the Octav Mayer Institute of Mathematics of the Romanian Academy, Iasi Branch. His work has significantly advanced the mathematical aspects of the mechanics of deformable solids, including contributions to the theory of dynamic thermoelasticity.

In recognition of his outstanding achievements, Dorin Ieșan has received several prestigious awards throughout his career. One notable recognition is the *Simion Stoilow* Prize awarded by the Romanian Academy in 1974 for his outstanding contributions to mathematics. This prize is named after the renowned Romanian mathematician Simion Stoilow and is one of the highest honors in the field of mathematics in Romania. Also as a recognition and high appreciation of his rich scientific activity, Dorin Ieșan became a member of the Romanian Academy in 2001.

Scientific Opera. The Professor's scientific research activity is focused to the mathematical study of the mechanics of deformable solids. He published more than 215 scientific papers, eight books, three monographs and three university courses.

Among his important achievements we note:

- a. Established variational characterizations in the dynamic theory of thermoelasticity;
- b. Gave a new method for solving Saint-Venant's problem in the classical theory of elasticity;
- c. Solved for the first time Saint-Venant's problem for Cosserat media;
- d. Established existence theorems for media with microstructure;
- e. Developed a theory of thermoelastic media with initial stresses and initial heat flux;
- f. Gave a method to solve the problem of deformation of thermoelastic cylinders composed of different materials;
- g. Gave a new method for solving Almansi's problem in classical elasticity;
- h. Established theories that describe the mechanical behavior of mixtures, which are materials composed of multiple constituents that interact with each other;
- i. Provided new approaches for materials with a double porosity structure, where macropores are connected to the body and micropores are connected to fissures in the skeleton;

- j. Provided new theories for non-simple materials that incorporates the effects of spatial non-locality, meaning that the material's response at a point depends not only on the state at that point but also on the states at neighboring points;
- k. Developed micropolar and micromorphic theories for thermoviscoelastic materials, and more others.

He was invited by various scientific institutions from abroad to present lectures and conferences. Thus, in 1979 he gave lectures at the courses organized by the International Center for Mechanical Sciences in Udine, Italy (published in the volume *Mechanics of Micropolar Media*, Eds. O. Brulin and R. K. Hsieh, World Scientific, Singapore, 1982). In 1994 he held courses in Rational Mechanics at the University of Catania, Italy. Professor Ieşan presented conferences at the Royal Institute of Technology, Stockholm (1982), Università di Roma "La Sapienza" (1992), Università di Bologna (1995), Università di Napoli Federico II (2000, 2011), Universitat Autònoma de Barcelona (2006), Università di Catania (1988, 2009), Universitat Politècnica de Catalunya, Barcelona (1998, 2010, 2012, 2015) and in other places.

In 2011, he held a conference at the ICTS plenary session (9th International Congress on Thermal Stresses, Budapest, 2011).

At the initiative of UNESCO, in 2012, the *Encyclopedia of Life Support Systems* (EOLSS, developed under the auspices of the UNESCO) was published, Eolss Publishers, Oxford, UK, 2012 and Professor Ieşan wrote the "Thermoelasticity" chapter of this encyclopedia.

Dorin Ieşan regularly was an active member of the editorial board of the *Journal of Thermal Stresses* from its inception in 1978 until present. He also was actively involved as Associated Editor for the *Encyclopedia of Thermal Stresses* and he edited the Section *Elastostatics and Thermoelastostatics* (see the next photo taken at the 9th Congress of THERMAL STRESSES in Budapest where the future Encyclopedia of Thermal Stresses is being discussed). The Encyclopedia of Thermal Stresses appeared in 2014 as an 11-volume interdisciplinary publication of Springer.

Also, he served as a member of the Committee of International Congresses on Thermal Stresses in Hamamatsu (1995), Rochester (1997), Kraków (1999), Osaka (2001), Blacksburg (2003), Vienna (2005), Urbana-Champaign (2009), Budapest (2011), Nanjing (2013), Salerno (2016).

The importance of the results established by Professor Dorin Ieşan is emphasized in reference works by established specialists, such as:

- i. D. E. Carlson, *Handbuch der Physik*, vol. VI a/2 (Ed. C. Truesdell), Springer, Berlin, 1972, p. 339;
- ii. G. Lebon, *Recent Developments in Thermomechanics of Solids*, Springer, Wien, 1980;
- iii. V. D. Kupradze, *Three-Dimensional Problems of the Mathematical Theory of Elasticity*, North-Holland Publ., Amsterdam, New York, Oxford 1979;
- iv. W. Nowacki, *Theory of Asymmetric Elasticity*, PWN and Pergamon Press, Oxford, Frankfurt, 1986;
- v. A. C. Eringen, *Microcontinuum Field Theories, I: Foundations and Solids*, Springer, New York, Berlin, 1999;
- vi. J. Dyszlewicz, *Micropolar Theory of Elasticity*, Springer, Berlin, 2004;
- vii. J. Ignaczak and M. Ostoj-Starzewski, *Thermoelasticity with Finite Wave Speeds*, Oxford University Press Inc., New York, 2010;
- viii. B. Straughan, *Stability and Wave Motion in Porous Media*, in *Applied Mathematical Sciences*, vol. 165, Springer, New York, 2008;
- ix. B. Straughan, *Mathematical Aspects of Multi-Porosity Continua*, in *Advances in Mechanics and Mathematics*, vol. 38, Springer, Cham, Switzerland, 2017;



Photo in Budapest, 2011: Meeting of Section Editors of the Encyclopedia of Thermal Stresses at the 9th International Congress on Thermal Stresses (ICTS) in Budapest on June 8, 2011.

- x. M. Svanadze, Potential Method in Mathematical Theories of Multi-porosity Media, in Interdisciplinary Applied Mathematics, vol. 51, Springer International Publishing, Cham, Switzerland, 2019.

The research activity of Professor Dorin Ieșan has materialized in a series of scientific publications as follows:

A. Books and monographs

1. *Probleme Fundamentale ale Teoriei Cosserat a Elasticității*, (Romanian), în Probleme actuale în mecanica solidelor, vol. I, Editura Academiei Republicii Socialiste România, București, 1975;
2. *Teoria Termoelasticității*, (Romanian), Editura Academiei Republicii Socialiste România, București, 1979;
3. *Saint-Venant's Problem in Micropolar Elasticity*, in Mechanics of Micropolar Media (Eds. O. Brulin and R.K.T. Hsieh), World Scientific, Singapore, 1982;
4. *Saint-Venant's Problem*, Lecture Notes in Mathematics, Springer-Verlag, Berlin, 1987;
5. *Prestressed Bodies*, Longman Scientific and Technical, Harlow, Essex and John Wiley & Sons, Inc., New York, 1989;
6. *Non-Classical Elastic Solids*, (with M. Ciarletta), Longman Scientific and Technical, Harlow, Essex and John Wiley & Sons, Inc., New York, 1993;
7. *Thermoelastic Deformations*, (with A. Scalia), Kluwer Acad. Publishers, Dordrecht, Boston, London, 1996;

8. *Elementi di Meccanica dei Continui con Applicazioni*, (Italian), (with M. Ciarletta), Pitagora Editrice, Bologna, 1997;
9. *Thermoelastic Models of Continua*, Kluwer Acad. Publishers, Dordrecht, Boston, London, 2004;
10. *Classical and Generalized Models of Elastic Rods*, Chapman & Hall/CRC Press, London, New York, Boca Raton, 2009;
11. *Thermoelasticity*, în *Continuum Mechanics*, vol. II (Eds. J. Merodio and G. Saccomandi), *Encyclopedia of Life Support Systems (EOLSS)*, Developed under the Auspices of the UNESCO, Eolss Publishers, Oxford, 2012.

B. Textbooks

1. *Mecanica Mediilor Continue*, (Romanian), Universitatea "Alexandru Ioan Cuza" din Iași, 1973;
2. *Mecanica Generalizată a Solidelor*, (Romanian), Universitatea "Alexandru Ioan Cuza" din Iași, 1980;
3. *Mecanica. Medii Elastice*, (Romanian), Editura Universității "Alexandru Ioan Cuza" din Iași, 2004.

C. Scientific articles

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3. Tensiuni termice în corpuri anizotrope în cazul problemelor plane, (Romanian), An. St. Univ. Iași, Matematica, 12 (1966), 206–212.
4. Principes variationnels dans la theorie de la thermoélasticité couplée, An. St. Univ. Iași, Matematica, 12 (1966), 439–456.
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Disclosure statement

No potential conflict of interest was reported by the author(s).

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