

# **Report of the “Creeping theory” department of IMM ANAS for the year 2016**

In “Creeping theory” department work 10 collaborators:

1. Talybly Latif Khalil – head of department
2. Kazimova Raisa Abulfaz – leading research associate.
3. Mir-Salim-zade Munevver Vagif – leading research associate.
4. Mamedova Mehriban Ali – leading research associate.
5. Mamedova Hijran Ali – research associate.
6. Bagirov Emin Telman – research associate.
7. Alimammadov Rashad Gurbat – junior research associate.
8. Nagiyeva Nigar Miryashar – junior research associate.
9. Bagirova Sema Asif – senior laboratory assistant
10. Shikhverdiyev Nemat Maarif – technician

8 of these (eight) are research associates, 1 (one) senior laboratory assistant and 1 (one) technician. In 2016, on the theme "The variable load the bodies of irreversible deformation." were executed. The plan provided for the eight works on the subject. Scientific studies have been conducted according to the plan.

## **I. Scientific activity**

Work: Theoretical using of visco-elastic deformation of the skin

Executor: doct.ph.math.sci., prof. L.Kh.Talybly

A mathematical formulation of the problem of intense deformation produced in the skin, based on the solution of the problem were obtained by determining the health conditions of safety during the operation to stretch the skin.

Work: Torsion of triangle with a cross-section in aggressive environment.

Executor: cand.ph.m.s., lead.re.ass R.A.Kazimova

The time of corrosive failure of torsion of triangle with a cross-section in aggressive environment was predicted.

Work: The solution of common quasi-static issue for the torsion deformation of viscoelasticity theory

Executor: cand.ph.m.s., lead.re.ass M.A.Mammadova

It has been found the formulas leading to the solution of problems of the theory of elasticity appropriate solution of the problem of torsion beam cross-section of arbitrary generalized quasi-static theory of viscoelasticity.

Work: Periodically contact problem for the stringer plate weakened system of cracks of variable thickness.

Executor: cand.ph.m.s., lead.re.ass M.V.Mirsalimzade

It has been found dimensions of the contact zone and contact stresses generated in the thin elastic plate of rectilinear periodic isotropic variable thickness weakened portions in contact with the contours of the cuts system.

Work: The corrosion destruction of concentric circular plate under internal and external pressure in non-stationary aggressive environment.

Executor: res.ass., H.A.Mammadova

The time of corrosion damage to the concentric circular plate subjected to deformation under internal and external pressure non-stationary variable aggressive environment concentration.

Work: The deformation of a semi-infinite array operation force relating to the surface in corrosive environment.

Executor: res.ass., E.T.Bagirov

Two alternative methods predicted time corrosion damage semi-infinite array operation force relating to the surface in a corrosive environment.

Work: Parametrical oscillations of the cylindrical cover filled with a viscous fluid vertically fortified from damaged orthotropic elastic material.

Executor: jun.res.ass., R.G.Alimammadov

Private study vibrations of orthotropic cylindrical cover taking into account the damage when in contact with a liquid medium reinforced rods exposed to a periodic force.

Work: Fatigue failure of the ring plate under pressure and the moment of impact in the internal circuit.

Executor: jun.res.ass., N.M.Nagiyeva

Defined number of repeated loadings leading to fatigue failure of the annular plate under the influence of repeated pressure and recurring moments in the internal circuit.

## **II. Scientific organizational activity**

On this period, members of the department have been published: two monographs (LAP LAMBERT Academic Publishing), 11 articles, 7 of them in foreign journals, 3 of them in impact factor journals and 1 article in Tomson Reuters journal.

There are two monographs: R.A.Kazimov "Some problems of the nonlinear theory of elasticity", and M.A.Mamedov "Long destruction of visco elastic-plastic materials."

Every Monday in the department held a seminar.

Head of Department

doct.phys.math.sci.,prof., L.Kh.Talybly