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ОТ СИНТЕЗА ПОЛИЭТИЛЕНА ДО СТЕРЕОДИВЕРГЕНТНОСТИ:
РАЗВИТИЕ ХИМИИ ЗА 100 ЛЕТ

Пермь, 2018

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GOLD-CATALYZED OXIDATION OF INTERNAL ALKYNES INTO BENZILS. ONE-POT SYNTHESIS OF PHENYTOIN DERIVATIVES
Dubovtsev A. Yu. *41*
ZWITTERIONIC MECHANISM OF REACTIONS BETWEEN DIAZAFLUORENE AND SELECTED CONJUGATED NITROALKENES: COMPREHENSIVE EXPERIMENTAL AND THEORETICAL STUDY
Jasiński R., Kula K., Kącka-Zych A., Mirosław B. *43*
APPLICATION OF DIALKYLIMIDAZOLIUM IONIC LIQUIDS FOR [4+2] CYCLOADDITIONS BETWEEN CYCLOPENTADIENE AND 2-ARYL-1-CYANO-1-NITROETHENES
Jasiński R., Łapczuk-Krygier A., Dresler E. *43*
SYNTHESIS OF NOVEL 3,3-BIS(INDOL-3-YL)-1,3-DIHYDROINDOL-2-ONES AND EVALUATION OF THEIR BIOLOGICAL PROPERTIES AND ANTICANCER ACTIVITY IN VITRO
Lavrenov S. N. *44*
DESYMMETRIZATION OF CYCLOPROPENES VIA THE POTASSIUM-TEMPLATED DIASTEREOSELECTIVE 7-EXO-TRIG CYCLOADDITION OF TETHERED AMINO ALCOHOLS TOWARD ENANTIOPURE CYCLOPROPANE-FUSED OXAZEPANONES WITH ANTI-MYCOBACTERIAL ACTIVITY
Maslivetc V., Maslivetc A., Rubin M. *46*
2-SUBSTITUTED QUINAZOLINES AS LIGANDS FOR METALLO- OR BORON-COMPLEXES WITH LUMINESCENT PROPERTIES
Moshkina T. N., Nosova E. V., Lipunova G. N., Charushin V. N. *48*
AFRICAN PROGRESS IN DRUG DEVELOPMENT CHEMISTRY; A 100 YEARS UPDATE
Mtewa A. G., Deyno S., Annu A. *50*
IDENTIFICATION OF SMALL MOLECULES AS ANTIVIRAL AGENTS IN THE TREATMENT OF EBOLA VIRUS DISEASE USING CONSENSUS SCORING
Onawole A. T., Kolapo T. U., Sulaiman K. O., Adegoke R. O. *52*
NOVEL SYNTHESIS OF Ni-Al CONTAINING DOUBLE LAYERED NANO CATALYSTS AND THEIR APPLICATION IN REGIOSELECTIVE SYNTHESIS OF N (2-HYDROXYPHENYL)BENZAMIDE
Sahu P. K., Gupta R., Sahu P. K., Srivastava S. K., Agarwala D. D. *53*
SYNTHESIS OF A NEW SERIES OF 5'-(INDOLINE-2-YLMETHYL)-3'-(4-METHYLBENZOYL)-4'-(*p*-TOLYL)SPIRO[INDOLINE-3,2'-PYRROLIDIN]-2-ONES VIA 1,3-DIPOLAR CYCLOADDITION: X-RAY CRYSTAL STRUCTURE, SAR AND BIOLOGICAL EVALUATION
Sharma R., Yadav L., Lal J., Mathur M., Swami A. K., Chaudhary S. *55*
OXIDATIVE DEHOMOLOGATION OF ALDEHYDES WITH OXYGEN AS A TERMINAL OXIDANT
Shipilovskikh S. A., Rubtsov A. E., Malkov A. V. *56*
MICROWAVE-ASSISTED SYNTHESIS OF C-HOMOAPORPHINES AS POTENT ANTICANCER AND ANTIMALARIAL AGENTS
Shyamlal B. R. K., Yadav L., Tiwari M. K., Kumar K., Chaudhary S. *58*
TRANSITION METAL-FREE DIRECT COUPLING OF ALDEHYDES WITH TERMINAL ALKYNES: A FAST, CONVENIENT PROCESS FOR THE SYNTHESIS OF PROPARGYLIC ALCOHOLS
Tiwari M. K., Yadav L., Shyamlal B. R. K., Chaudhary S. *59*
ONE-POT CHEMO/REGIO-SELECTIVE GENERATION OF LIBRARY OF FUNCTIONALIZED SPIROOXINDOLES/PYRROLIDINES FROM NATURALLY OCCURRING CHALCONES AS POTENTIAL ANTI-TYROSINASE AGENTS
Yadav L., Tiwari M. K., Shymlal B. R. K., Rawat N., Chaudhary S. *60*

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AFRICAN PROGRESS IN DRUG DEVELOPMENT CHEMISTRY; A 100 YEARS UPDATE

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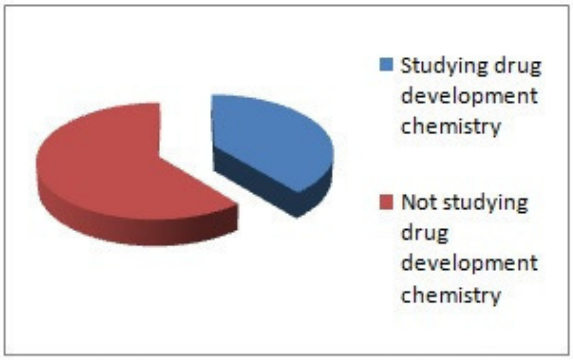
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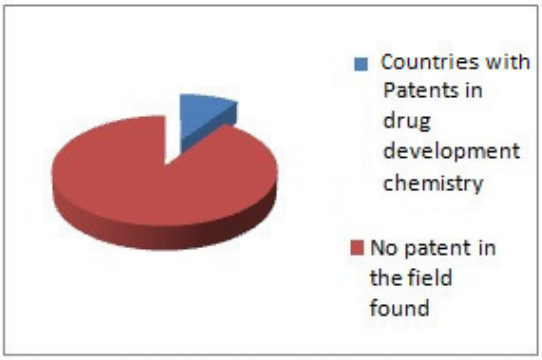
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Drug development [1], drug-like-properties [2], drug discovery [3], drug absorption[4], drug synthesis [5], drug bioavailability [6], drug distribution [7], drug metabolism [4], drug solubility [8], drug elimination [4], drug toxicity [3], drug templates [2], drug permeability [9], African drug patents [10], African top 100 universities [11]



Top 100 African Universities studying drug development chemistry related areas at PG levels and affiliated research centers



Patent ownership by number of countries in Africa in drug development related products (Top 100 university hosts only)

Africa is currently very active in the search for drugs particularly with focus on the pre-clinical phases of drug discovery. This work aimed at determining the extent to which Africa has gone with research and studies in advanced stages of drug discovery in the past 100 years which is the development stage. Drug development in this context refers to the identification and optimization of proven bioactive molecules beyond the pre-clinical trial phases approved or with potential to be approved as a drug against biological targets.

The systematic data search, screening and review were conducted between 14th February, 2018 and 10th April, 2018, covering all data available throughout the past 100 years. Top 100 African universities were screened through their official and all affiliated websites available online to outline postgraduate programs offered, research categories undertaken as well as the possession of at least one drug discovery and development related patents. The method used *webometrics.info*, a common university ranking website to identify included study candidates. The methods to use websites was justifiable as they are the point of interface to show the best of what any university is doing and has achieved. All data outside the open sources and those not in

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English were excluded and undergraduate studies were also not included due to the less impact they have on research.

Of the top African Universities, 39% were found to be providing studies at a post graduate level and in their affiliated research centers related to drug synthesis, medicinal, pharmaceutical chemistry and drug development. Focus covered included cancers and malaria making the studies relevant for the continent. About 10% of the countries represented by these universities have local patents in products related drug development. The slow progress in this area in Africa is attributed to poor or/and inadequate laboratory facilities, equipment, funding for research and brain drain in the field. This is compounding poverty as the continent doesn't earn much from drug product and intellectual property from this area. For drugs, most of these are importing from oversees, further burdening their budgets. Another factor for the low showing is that some researchers prefer to work their ideas with facilities overseas and patent their products there. Currently, the World Bank's interventions using African Centers of Excellency is providing hope which shall be measured in time.

In conclusion, African progress can be better if the majority of countries get to own well equiped facilities for cutting edge work in drug discovery and development. As partners, deliberate efforts should be scaled up from development partners to lift this section further in this area through equipment and laboratory investments and encourage local patenting of intellectual property.

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