الاستاذ الدكتور علي بن عبدالله الشتوي

استاذ التغذية و تداخل العناصر الغذائية والجينات
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أستاذ التغذية و تداخل العناصر الغذائية و الجينات في جامعة الملك سعود. حصل على دكتوراه في الفلسفة، في عام 2003م من جامعة أريزونا (أريزونا) في امريكا.

يتركز النشاط البحثي :

1- **دراسة تاثيرالمركبات الطبيعة والعناصر الغذائية و دورها في موت الخلايا المبرمج وتأثيرها على الجينات المثبطه للاورام في الخلايا السرطانية**
2- **عزل جزيئات النانونية من الأغذية والمنتجات الغذائية و تقييم سميتها وتصميم مركبات نانونية ودراسة سميتها وتطبيقاتها الطبية على خلايا الانسان الجذعية والخلايا اليمفاوية وخلايا الرائة و خلايا سرطانية مختلفة**
3- **دراسة تأثير الاغذية والمركبات الطبيعية على انقسام الخلايا الجذعية الى دهنية ومدى تأثير تلك المركبات على انقسام الخلايا الدهنية وموت الخلايا المبرمج ودورهما في تثبيط السمنة**

الجوائز

جائزة سوق للابداع والتميز العلمي 1934

- Souk Okaz award for scientific excellence and innovation.

نشر اكثر من 150 ورقة علمية

الحصول على اكثرمن 20 براءات الاختراع

منها: - منتج التمر المدعم كمكمل غذائي للعناصر المعدنية

- عزل وتصنيع مركبات نانونية (سليلوز – لجنين – كربون) من بقايا النخيل

- تصنيع مركبات نانونية من الجنين واكسيد الزك للوقاية من اشعة الشمس

قائمة براءات الاختراع

Patents

1. **Alshatwi, Ali A.,** Jegan Athinarayanan. and Vaiyapuri Subbarayan Periasamy, Fortified date fruit product, US 11006659, 2021

2. **Alshatwi, Ali A.,** Jegan Athinarayanan. and Vaiyapuri Subbarayan Periasamy, Lignin-zinc oxide nanohybrid emulsion for UV protection, US 10925827, 2020
3. **Ali A. Alshatwi**, Jegan Athinarayanan Vaiyapuri Subbarayan Periasamy, and Khalid Abdulkarim Alatiah, Method for the production of nano-cellulose structures, KSA 8143, 2020
4. Jegan Athinarayanan Vaiyapuri Subbarayan Periasamy and **Ali A. Alshatwi**, Method of manufacturing biocompatible cellulose nanofibers, KSA 7843, 2020
5. **Ali A. Alshatwi,** Jegan Athinarayanan and Vaiyapuri Subbarayan Periasamy Synthesis of ultrafine structures from agricultural residues of date palm, KSA 8780, 2020
6. **Alshatwi, Ali A.,** Jegan Athinarayanan. and Vaiyapuri Subbarayan Periasamy, Method of fabricating nanostructures from fish waste, US 10383976, 2019
7. Abdulrahman I. Almansour, Natarajan Arumugam, Raju Suresh Kumar, Periasamy Vaiyapuri Subbarayan, **Ali Abdullah Alshatwi**, Jegan Athinarayanan, Anti-cancer agents – **US 9873699,** 2018
8. **Ali Abdullah Alshatwi,** Jegan Athinarayanan, Periasamy Vaiyapuri Subbarayan, Method of producing cellulose nanostructures – **US 9896661,** 2018.
9. **Ali Abdullah Alshatwi,** Jegan Athinarayanan, Periasamy Vaiyapuri Subbarayan, Synthesis of nanostructures from agro-wastes - **US 9896342,** 2018
10. **Ali Abdullah Alshatwi,** Jegan Athinarayanan, Periasamy Vaiyapuri Subbarayan, PH sensing biofilm – **US 10054548,** 2018
11. Jegan Athinarayanan, **Ali Abdullah Alshatwi,** Periasamy Vaiyapuri Subbarayan, Method of fabricating biocompatible cellulose nanofibrils – **US 10066028,** 2018.
12. **Alshatwi, Ali A.,** Jegan Athinarayanan. and Vaiyapuri Subbarayan Periasamy, PH sensing biofilm, US 10054548, 2018
13. Jegan Athinarayanan, **Ali A. Alshatwi,** and Vaiyapuri Subbarayan Periasamy, A method for the production of noble nano-metallic compounds, KSA 6329
14. Vaiyapuri Subbarayan Periasamy, Jegan Athinarayanan and **Ali A. Alshatwi**, How to make a 3D platform out of leaves, KSA 7650
15. Jegan Athinarayanan Vaiyapuri Subbarayan Periasamy and **Ali A. Alshatwi,** Method for making a 3D ultrastructure of a 3D cell culture, KSA 5189

16. **Ali Abdullah Alshatwi,** Jegan Athinarayanan, Periasamy Vaiyapuri Subbarayan, Method for producing noble metal nanocomposites- **US 20170298518,** 2017
17. **Ali Abdullah Alshatwi,** Jegan Athinarayanan, Periasamy Vaiyapuri Subbarayan, A method of producing biogenic silica nanoparticles- **US 9403688,** 2016

18. Periasamy Vaiyapuri Subbarayan, **Ali Abdullah Alshatwi,** Jegan Athinarayanan, Method of making three-dimensional, leaf-based scaffold for three-dimensional cell culture - **US 9783777,** 2017
19. Abdulrahman I. Almansour, Natarajan Arumugam, Raju Suresh Kumar, Periasamy Vaiyapuri Subbarayan, **Ali Abdullah Alshatwi,** Anti-cancer compound - **US 9486444,** 2016
20. **Ali Abdullah Alshatwi,** Jegan Athinarayanan, Periasamy Vaiyapuri Subbarayan, Method of making three dimentional scaffold for three-dimensional cell culture **US 9193949,** 2015

Ongoing projects مشاريع قائمة

Project title	Funding Agency & Number	Role
Development of Multifunctional Nanostructured Materials Based Edible Coating/Films for Date Palm (Phoenix dactylifera) Fruits تطوير أغشية (صالحة للأكل) من مواد نانونية متعددة الوظائف لفاكهة نخيل التمر (Phoenix Dactylifera)	Ministry of Environment, Water & Agriculture 2200011540	**Principal Investigator**
Synthesis of Multifunctional Nanostructures using Phoenix dactylifera L. Agrowastes as Sustainable Bio-precursor for Biomedical Applications **تصنيع مركبات نانونيه متعددة الوضائف مشتقه من مخلفات النخيل لتطبيقات الطبيه الحيوية**	NPST 15-NAN5012-02	**Principal Investigator**
Screening of human cell – nanoparticle interaction specific biomarkers for safety risk analysis of nanoscale-food additives **الكشف عن لتداخل جسيمات متناهية الصغر مع خلايا الانسان من خلال مؤشرات حيوية محددة لتحليل مخاطر سلامة الغذاء للمضافات الغذائية النانونية**	NPST 14-ENV2567-02	**Principal Investigator**
Physico-chemical speciation of polar/non-polar polycyclic fatty acid materials (PNP-PC-FAMs) as neo-formed contaminants in junk foods and their role in pathogenesis of chronic inflammation and metabolic disorders **الخصائص الفيزيائية والكيميائية للمواد البوليمرية القطبية والغير قطبية (ملوثات جديدة تتشكل في الوجبات السريعة) ودورهم بالإصابة بالأمراض المزمنة واضطرابات التمثيل الغذائي**	NPST 15-MED5103-02	**Principal Investigator**

Molecularly Engineered Nanostructured Electrodes for the Conversion of Food Waste into Electricity in Microbial Fuel Cells هندسة المواد النانوية الجزيئية للأقطاب لتحويل النفايات الغذائية إلى طاقة كهربائية بواسطة خلايا الوقود الميكروبية	MOE DRI-KSU-1017	**Principal Investigator**

Selected Publications

Selected Publications (* as corresponding author)

1. Athinarayanan, J., Almaiman, S.A., Al-Harbi, L.N., Periasamy, V.S. and **Alshatwi, A.A***., 2021. Fabrication of fluorescent carbon nanodots from laboratory paper waste for Fe3+ ions detection. Journal of King Saud University-Science, 33(7), p.101584.
2. Salamatullah, Ahmad Mohammad, P. Subash-Babu, Amr Nassrallah, **Ali A. Alshatwi,** and Mohammed Saeed Alkaltham. "Cyclotrisiloxan and β-Sitosterol rich Cassia alata (L.) flower inhibit HT-115 human colon cancer cell growth via mitochondrial dependent apoptotic stimulation." Saudi Journal of Biological Sciences 28, no. 10 (2021): 6009-6016.
3. Athinarayanan, J., Periasamy, V. S., & **Alshatwi, A. A***. (2021). Fabrication of cellulose nanocrystal-decorated hydroxyapatite nanostructures using ultrasonication for biomedical applications. Biomass Conversion and Biorefinery, 1-14.
4. Krishnamoorthy, R., Gassem, M. A., Athinarayanan, J., Periyasamy, V. S., Prasad, S., & **Alshatwi, A. A*.** (2021). Antifungal activity of nanoemulsion from Cleome viscosa essential oil against food-borne pathogenic Candida albicans. Saudi Journal of Biological Sciences, 28(1), 286-293.
5. Athinarayanan, J., Periasamy, V. S., Alatiah, K. A., & **Alshatwi, A. A*.** (2020). Synthesis and cytocompatibility analysis of carbon nanodots derived from palmyra palm leaf for multicolor imaging applications. Sustainable Chemistry and Pharmacy, 18, 100334.
6. Periasamy, Vaiyapuri Subbarayan, Jegan Athinarayanan, and **Ali A. Alshatwi***. "Bio-inspired plant leaf skeleton based three dimensional scaffold for three dimensional cell culture." Sustainable Chemistry and Pharmacy 18 (2020): 100321.
7. Al-Harbi, L. N., Subash-Babu, P., Binobead, M. A., Alhussain, M. H., AlSedairy, S. A., Aloud, A. A., & **Alshatwi*, A. A.** (2020). Potential metabolite nymphayol isolated from water lily (Nymphaea stellata) flower inhibits MCF-7 human breast cancer cell growth via upregulation of Cdkn2a, pRb2, p53 and downregulation of PCNA mRNA expressions. Metabolites, 10(7), 280.
8. Athinarayanan, J., Periasamy, V. S., & **Alshatwi, A. A*.** (2020). Simultaneous fabrication of carbon nanodots and hydroxyapatite nanoparticles from fish scale for biomedical applications. Materials Science and Engineering: C, 117, 111313.

9. Athinarayanan, Jegan, **Ali A. Alshatwi***, and Vaiyapuri Subbarayan Periasamy. "Biocompatibility analysis of Borassus flabellifer biomass-derived nanofibrillated cellulose." Carbohydrate Polymers 235 (2020): 115961.

10. Pandurangan, S. B., Al-Saran, N., M Alshammari, G., Naif Al-Harbi, L., Hussain Alhussain, M., Abdulaziz AlSedairy, S., & **Abdullah Alshatwi, A**. (2021). Evaluation of biosafety, antiobesity and endothelial cells proliferation potential of basil seed extract loaded organic solid lipid nanoparticle. Frontiers in pharmacology, 2419.

11. Athinarayanan, Jegan, Saleh Ahmed Atiah Hamad Jaafari, Vaiyapuri Subbarayan Periasamy, Taghreed Naser Abdulaziz Almanaa, and **Ali A. Alshatwi***. "Fabrication of Biogenic Silica Nanostructures from Sorghum bicolor Leaves for Food Industry Applications." Silicon (2020): 1-8.

12. Periasamy, V. S., Athinarayanan, J., Ramankutty, G., Akbarsha, M. A., & **Alshatwi, A. A***. (2020). Plumbagin triggers redox-mediated autophagy through the LC3B protein in human papillomavirus-positive cervical cancer cells. Archives of Medical Science, 16(1).

13. Jaafari, Saleh Ahmed Atiah Hamad, Jegan Athinarayanan, Vaiyapuri Subbarayan Periasamy, and **Ali A. Alshatwi***. "Biogenic Silica Nanostructures Derived from Sorghum bicolor Induced Osteogenic Differentiation through BSP, BMP-2 and BMP-4 Gene Expression." Process Biochemistry (2019).

14. Krishnamoorthy, Rajapandiyan, Abdulraheem R. Adisa, Vaiyapuri Subbarayan Periasamy, Jegan Athinarayanan, Subash-Babu Pandurangan, and **Ali A. Alshatwi***. "Colonic Bacteria-Transformed Catechin Metabolite Response to Cytokine Production by Human Peripheral Blood Mononuclear Cells." Biomolecules 9, no. 12 (2019): 830.

15. Jegan Athinarayanan, Vaiyapuri Subbarayan Periasamy, **Ali A Alshatwi***, Phoenix dactylifera lignocellulosic biomass as precursor for nanostructure fabrication using integrated process, International Journal of Biological Macromolecules,134, (2019) 1179-1186

16. Nouf Abdulkareem Omer Alkharashi, Vaiyapuri Subbarayan Periasamy, Jegan Athinarayanan, **Ali A.Alshatwi***, Sulforaphane alleviates cadmium-induced toxicity in human mesenchymal stem cells through POR and TNFSF10 genes expression, Biomedicine & Pharmacotherapy, 115, (2019), 108896

17. Jegan Athinarayanan, Vaiyapuri Subbarayan Periasamy, Akram Ahmed Qasem, and **Ali A. Alshatwi***. Pennisetum glaucum Seed Husk Derived SiO_2 Nanostructures: Characterization and in vitro Cytotoxicity Assessment on Human Mesenchymal Stem Cells, Journal of Materials science Materials in Medicine 30 (2019) 23.

18. Jegan Athinarayanan, Vaiyapuri Subbarayan Periasamy, Akram Ahmed Qasem, and **Ali A. Alshatwi***. "Borassus flabellifer biomass lignin: Isolation and characterization of its antioxidant and cytotoxic properties." Sustainable Chemistry and Pharmacy 10 (2018): 89-96.

19. J Athinarayanan, VS Periasamy, R Krishnamoorthy, **AA Alshatwi*,** Evaluation of antibacterial and cytotoxic properties of green synthesized Cu2O/Graphene nanosheets, Materials Science and Engineering: C 93, 242-253

20. J Athinarayanan, VS Periasamy, **AA Alshatwi***, Fabrication and cytotoxicity assessment of cellulose nanofibrils using Bassia eriophora biomass, International journal of biological macromolecules 117, 911-918

21. Rajapandiyan Krishnamoorthy, Jegan Athinarayanan, Vaiyapuri Subbarayan Periasamy, Abdulraheem R Adisa, Mohammed A Al-Shuniaber, Mustafa A Gassem, **Ali A Alshatwi***,

Education

Degree		**School**	
B.A	البكالوريوس	King Saud University Riyadh, Saudi Arabia.	جامعة الملك سعود
M.S	ماجستير	King Saud University Riyadh, Saudi Arabia	جامعة الملك سعود
PhD	دكتوراة	University of Arizona Tucson, Arizona, USA	جامعة اريزونا

Thesis: Regulatory Mechanisms in The Stabilizations of p53 Tumor Suppressor Gene in Zinc Depleted Hepatoblastoma Cells

االمسؤوليات الأكاديمية والدورات

- **رئيس الجمعية السعودية للغذاء والتغذية**
- **عضو في اللجنة الدائمة للوقاية من التلوث الكيميائي والبيولوجي**
- **الاشراف على اكثر من ثلاثين طالب وطالبة ماجستير ودكتوراة**
- **عضو في العديد من الجمعيات السعودية والدولية**
- **القاء محاضرة البرنامج في المؤتمر السعودي السابع للغذاء والتغذية 2018 بعنوان : سلامة المواد النانونية بالتغذية**
- **المشاركة واللقاء في اكثر من 20 مؤتمر دولي\ المساهمة في خدمة المجتمع من خلال محاضرات لقاءت تلفزيونية ومقالات**
- **تدريس العديد من المقررات منها**
  - **FSN 631 : Nutritional aspect of Enegery Balance**

- **FSN 580: Nutrition & gene interaction**
- **FSN 315: Nutritional Biochemistry**
- **FSN488 : Nutrition and gentics**

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حظور العديد من دورات تدريبية منها -

- Qualifying halal assessors and auditors according to GCC standard GSO2055-2, ISO TS 22003, during 2018, Riyadh KSA.
- Bloodborne Pathogens Training, University of Arizona, Tucson, AZ USA.
- Laboratory Safety Training, University of Arizona, Tucson, AZ USA.
- Radiation Protection Training Course University of Maryland, College Park, USA.
- Recent Progress of Nanoscience and Nanobiotechnology, including nanoparticle preparation and characterization, encapsulation of drug with nanocarriers and nanosafety, National Centre for Nanoscience and Technology, China.
- Managing Safely Training Program, King Saud University, and KSA.
- Institution of occupational safety and health, Managing safety, King Saud University, and KSA.
- Outcome based learning, King Saud University and KSA.
- Students learning outcome assessment, King Saud University, and KSA.
- Managing safety training programme, King Saud University, and KSA during 2015.
- Qualifying halal assessors and auditors according to GCC standard GSO2055-2, ISO TS 22003, during 2018, Riyadh KSA.